#### COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR TRUCK AND BUS FLEET OPERATORS



### **Construction Fleet**

MAINTENANCE AND SPECIFICATIONS ISSUE



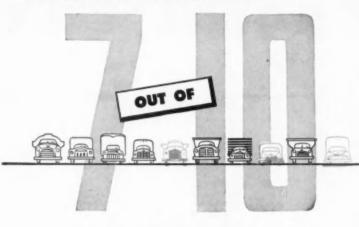
### Dodge earns a 54% bigger share of heavy-duty-truck sales!



Annual registration figures show heavy-duty-truck buyers are swinging to Dodge. And no wonder! For Dodge now hauls up to ½ more payload than competitive models. Dodge engines pack a wallop up to 234 hp.—on regular gas. New Dodge Truck Center facilities assure prompt delivery of any model... quick conversion to exact needs... fast parts service. New fleet financing, too. All this, plus low cost and Dodge dependability. See your Dodge dealer—get all the reasons why so many truckers choose Dodge!

DODGE Power Giants

THE MANUFACTURERS OF MORE THAN

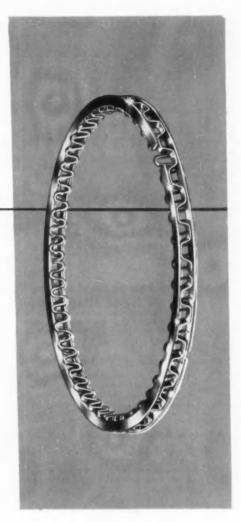


#### trucks in the United States today use Pedrick <u>Formflex</u> Rings

Pedrick Formflex Rings are used as original equipment and/or for official replacement service by the manufacturers who make 73% of all the trucks in use in the United States today.

In Pedrick Formflex rings, these manufacturers get the utmost Conformability, two to four times Longer Life, absolutely Uniform Tension, far greater Oil Drainage and independence from groove depths. These are the features which make top performance possible. No wonder so many truck manufacturers have selected Pedrick.

Furthermore, Pedrick Formflex rings are All-Purpose. They are guaranteed to outperform and outlast in *any* engine—new, rebored, resleeved, slightly worn or badly worn. So, to raise the level of performance in the engines of your fleet, always use Pedrick Formflex Chrome Ring Sets.





FORMFLEX CHROME PISTON RING SETS

WILKENING MANUFACTURING CO. PHILADELPHIA 42, PA.

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#### COMMERCIAL CAR

--- July 1958 • Vol. 95 • No. 5-

#### This Month's Features • • •

#### How to Get Your Share of Seaway Tonnage. 66 Inland Likes Its Driver Bonus Plan..... There's new business ahead when Great Lakes ports are opened to deep-draft ocean vessels. The plans you make now can assure that you'll get your share. Here are latest available predictions on the Seaway's impact It takes a five-year safety record to qualify for a cash bonus under Inland Petroleum Transportation Co.'s plan. Added to the National Safety Council's driver award program, the bonus has helped cut accidents Running Shop Order Streamlines Paperwork 81 Research Seeks to "Find a Better Way".... 70 Highways Are Being Built..... At Consolidated Freightways, Bert Ogden's Equipment Development Dept. takes a close look at maintenance and equipment to see what improvements can be made, then More than 8000 miles of the Interstate system are already finished or under construction as the road building program passes on its suggestions for action by regional managers passes the two-year mark. In this progress report you can see what's happened so far, how the future looks Allison's Automatic Rates Well On-Highway 72 Turntable Handles Big Trucks in Small Space 104 Now available on medium and heavy-duty trucks, the fully automatic "Torgmatic" transmission has proved itself in fleets and road tests. Here's how it works, and why Allison expects it to gain full fleet acceptance within a short time Oshkosh Offers 30-ton Dumper..... 106 Dallas Transit Tests Air Conditioning...... 106 Sprayed Resin Coats Trailer Walls...... 108 Try These Tips for Better Engine Service.... 76 Metro Introduces High Cube Models...... 108 When CCJ's Mobile Editorial Team visited central Motor Lines' engine shop at Charlotte, N. C., it found the shop crew had developed interesting techniques for streamlining New Generator Has No Brushes..... 141 engine overhauls. Here's a report in words and pictures ICC Finds Driver Responsible in Accident.. 155

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Construction is a big, big plus for Commercial Car Journal's readers. Not only because it takes a healthy-sized fleet to build highways (page 82) . . . or something like the St. Lawrence Seaway (page 66) . . . but also because it usually brings better operations and more business for all fleets.

#### JOURNAL

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EQUIPMENT screw-hole spacing for no-drill replacement.

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Cost-per-Mile Going Up?

### Look at the Rim

before you blame the Tire

See for yourself
how
Goodyear Rims
reduce
tire failures



Note how narrow base forces beads together, causing excessive sidewall flex. Result: all kinds of tire trouble.



First and only proved lightweight carbon steel rim. Tire rolls on broader base, with less flexing, less heat. Proved in 8 years of constant use.



Exclusive Goodyear Bond-a-Coat finish resists corrosion and discoloration indefinitely.



Looking for a way to cut tire costs? Look at your rims. The right rim for your tires can make all the difference in lowering cost-per-mile.

As the picture shows, Goodyear Wide Base Rims are specifically made to insure longer tire life. On these rims, tires roll on a greater volume of air, to reduce such common causes of tire failure as tread cracking, tread wear, sidewall failure, ply separation and bead failure.

In fact, experience proves that these scientifically engineered rims make possible up to 30% more service from every tire.

What's more, Goodyear Wide Base Rims are far lighter than old style rims — enabling you to reduce your unsprung weight. This can mean a pay load increase of as much as 100 pounds.

Let the Goodyear Rim Engineer give you the whole story on these modern rims, and what they can do to lower your tire costs. See your local distributor or write: Goodyear, Metal Products Division, Akron 16, Ohio.

Buy and Specify

GOOD YEAR

More tons are carried on Goodyear Rims than on any other kind

METAL PRODUCTS DIVISION

#### THE OVERLOAD

E D I T O R I A L C O M M E N T

#### **Associations Without Dues**

THERE ARE a number of associations within the trucking industry which serve you faithfully and substantially year after year. Yet you as a fleet operator are not eligible for membership. Hence you pay no dues (even though members pay substantial ones). It's pretty close to a free ride . . . and time to set the record straight.

For these are the associations representing the manufacturers of the products you use. You'll find about 20 of them listed in your CCJ November Directory issue. They cover everything from tires to complete trucks, from fuels and lubricants to truck bodies and trailers.

Obviously there isn't room to mention them all. But two of the most active will serve as examples. They are: The Automobile Manufacturers Association and The Truck Trailer Manufacturers Association.

Between them they represent just about every maker of any vehicle you operate. And every one of those vehicles is a better product because of association activities.

Take the joint engineering committees of the two groups as an example. Year in and year out they are constantly at work on industry-wide problems. Among recent issues: Bumperto-back-of-cab dimensions, fifth wheel locations, better braking, improved riding quality, more durable wiring. A "hot" one right now is the refrigerated trailer rating program spon-

sored by the trailer manufacturers group.

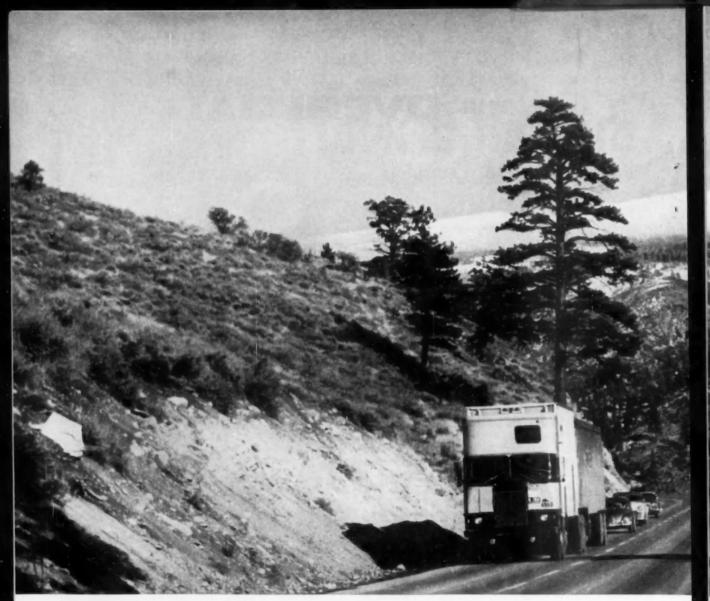
While comments from individual fleetmen are always welcome, most frequent contacts come through the technical committees of the American Trucking Assns. A numbering system for proposals from ATA reveals that more than 200 projects have been tackled in recent years.

When the committees get stuck they are quick to refer a problem to specialists in similar organizations such as the Tire & Rim Assn., The Rubber Manufacturers Assn., the Truck Body and Equipment Assn., or perhaps the Society of Automotive Engineers.

Yet this is still only one way the manufacturing groups serve you. They also spend real dough on public relations programs for the trucking industry. AMA has sponsored many dramatic films and publications with wide circulation. TTMA has its own advertising campaign. And many members of both groups support the activities of the ATA Foundation.

The moral is brief. Next time you read about the activities of these and other manufacturers groups don't underestimate their value to you. Sure you're the end product—the guy they sell to. But their activities are real and worthwhile, going far beyong the call of duty. As TTMA Past President Les Allman put it recently, "We help ourselves best when we help our customers first."

Bart Rawson



### Here's where you

...and here's where you can get it: Texaco D-303 Motor Oil HD

Texaco D-303 Motor Oil HD puts full engine power to work for you because it keeps engine compression high and promotes complete fuel combustion. It keeps piston rings free to minimize blow-by, so the engine burns fuel the way it was meant to: for full power.

You get these advantages because Texaco D-303 Motor Oil HD has full detergent and dis-

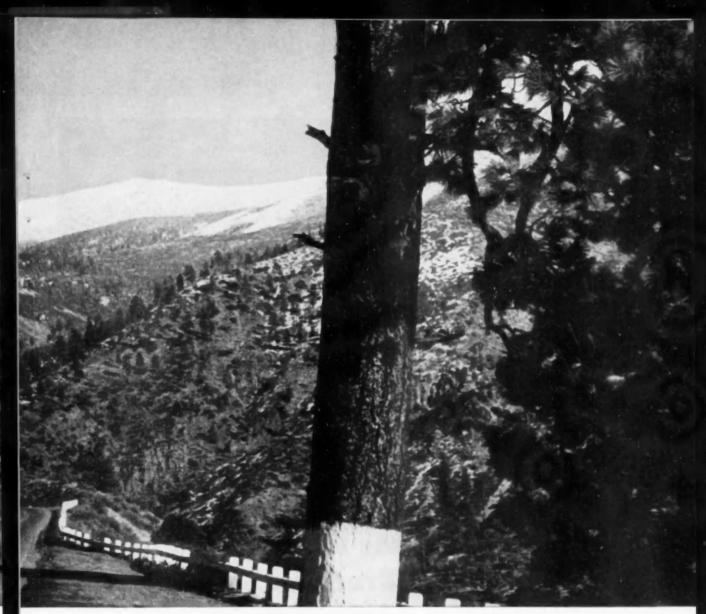
persive properties. Contaminants and deposits stay in the oil instead of sticking to valves and rings. The engine stays "like new" longer, so that it uses less fuel per mile, runs more miles between overhauls. Texaco D-303 Motor Oil HD is refined especially for rugged service in heavy duty diesel or gasoline truck engines, cuts maintenance costs way down.

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There is a full line of Texaco Lubricants for your operation, wherever you are. A Texaco Lubrication Engineer will gladly help you select the proper ones. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States—or write:

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LUBRICATION IS A MAJOR FACTOR IN COST CONTROL

(PARTS, INVENTORY, PRODUCTION, DOWNTIME, MAINTENANCE)





### Truck owner gets 160,000 miles <u>plus</u> 4 retreads from Traction Express tires!

ROGER SMITH'S trucks make the 4,500-mile round-trip from Mason City, Iowa to the west coast with loads of fresh and frozen meat and fruit. Trucks operate 24 hours a day, up and down mountains, across deserts. Mileage and dependability are two things Smith needs in tires—two things he gets with B.F.Goodrich Traction Express tires.

"They give me over 160,000 miles of service—and I can still retread them 4 times for a total of nearly 450,000 miles," Smith writes. "Traction Express tires have completely eliminated bruise-blowouts!"

One reason for this outstanding service is the B.F.Goodrich FLEX-RITE NYLON cord body. It withstands double the impact of ordinary materials, resists heat blowouts and flex breaks. B.F. Goodrich FLEX-RITE. NYLON outwears even the extra-thick Traction Express tread—can be retreaded over and over!

Now you get even more traction because of the new Safety Grip tread. Hundreds of extra skid-resisting, roadgripping edges give you positive pulling power in forward or reverse. Take a tip from fleet operators like Roger Smith. Switch to new B.F.Goodrich Traction Express Safety Grip tires. See your B.F.Goodrich dealer today. He's listed under Tires in the Yellow Pages of your phone book. B.F.Goodrich Tire Co., A Division of The B.F.Goodrich Co., Akron 18, Ohio.

Specify B.F.Goodrich Tubeless or tube-type tires when ordering new trucks or trailers



B.F.Goodrich truck tires

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### CCJ

#### AT YOUR SERVICE

TIMELY NOTES ON MAINTENANCE AND OPERATION Edited by Paul A. Murphy, Technical Editor



#### Wha' Done It?

THE MECHANIC'S first diagnosis was that the spark plug insulator had failed causing the scoring condition on the piston skirt and cylinder walls. However, after a more careful examination, it was discovered that the piston pin was too tight in its bosses preventing proper expansion. Thus distortion and eventual scuffing took place and pre-ignition occurred during high speed operation. Consequently, the spark plug insulator was damaged by this pre-ignition, rather than the piston having been damaged by failure of the spark plug.

#### Check Automatic Transmission Fluid

ACCORDING TO Dodge, the rate of deterioration of automatic transmission fluid is directly related to operating conditions encountered by the vehicle. In order to maintain efficient operation and proper functioning of an automatic transmission, the fluid must be periodically drained from the transmission and torque converter, and refilled to the proper

level with type A transmission fluid. It is recommended that such change should be made after each 10,000 miles of operation. Where severe driving conditions are usual, such as door to door operation or continuous operation at higher than normal loading, it is recommended that the transmission oil pan be removed and the intake screen thoroughly cleaned when fluid is changed. Dodge emphasizes that engines should not be idled for long periods of time with transmission in gear. Note: Idling in gear for short periods in quick succession such as door to door delivery can be equally harmful.

#### How are Your Road Failures?

ACCORDING TO the American Automobile Assn.'s car breakdown report for 1957, battery and electrical failures rated first.

Extreme weather conditions in January, February, March and December were largely responsible for the unusual increase in battery and electrical service calls.

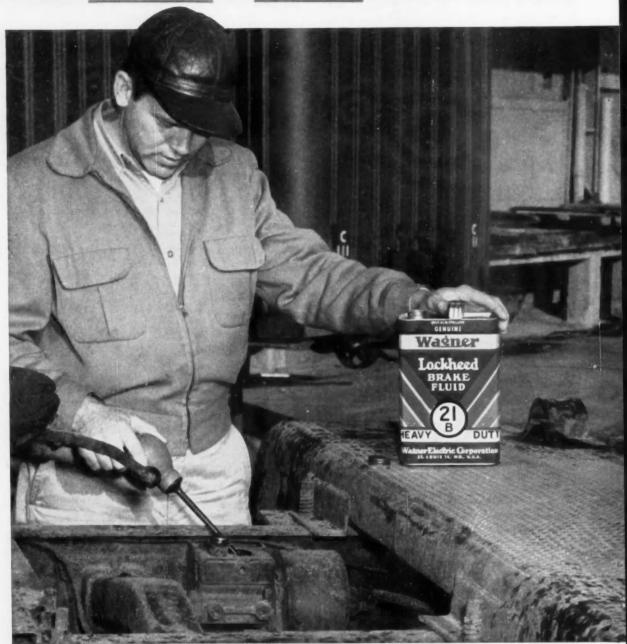
Here is the percentage breakdown as to the type of failures:

	Type of Service	Per Cen
1.	Battery & Electrical	24.23
2.	Tire	22.93
3.	Ignition	13.51
4.	Tow or Wrecker	10.93
5.	Stuck	5.26
6.	Carburetor	3.59
7.	Out of Gas	3.41
8.	Starter	3.18
9.	Gas Line	2.04
10.	Lock and Key	1.58
11.	Brakes	1.49
12.	Lights	1.22
13	All Others	6.63

#### Unusual Coil Problem

CHAMPION ENGINEERS inform us that sometimes a partial vacuum develops inside the ignition coil causing an intermittent (TURN TO PAGE 12, PLEASE)

### It's better...safer...because



### Wasner Lockheed the best known name in brake service

LOCKHEED BRAKE PARTS, FLUID, EXCHANGE SHOES and LINING . AIR HORNS . AIR BRAKES . TACHOGRAPHS 10

COMMERCIAL CAR JOURNAL, July, 1958

### it's chemically balanced!

#### Wasner Lockheed Hydraulic Brake Fluid

has proper chemical balance to function under all operating conditions

IF YOU have vehicles equipped with hydraulic brake systems—for safety's sake standardize on Wagner Lockheed Brake Fluid. Keep the hydraulic system filled with genuine Wagner Lockheed... there's none better, none safer... surpasses S.A.E. specifications.

#### WAGNER LOCKHEED HAS THESE FEATURES:

- Chemically balanced—so that it maintains high operating temperature characteristics, yet functions in sub-zero temperatures

   has extreme heat-cold range.
- Does not cause cups or hose to swell.
- Will not rust or corrode metal parts.
- Forms no gummy residue.
- Maintains chemical characteristics even after long use.
- Does not evaporate rapidly.
- Amply lubricates the brake system.
- Every batch made is chemically analyzed.
- Has enough moisture absorption so that no separation occurs.
- Used by vehicle manufacturers.
- Packaged in 12 oz., quart, gallon, 5, 30 and 54 gallon containers.

You can get Wagner Lockheed Brake Fluid, Brake Parts, Brake Lining and Exchange Shoes from a convenient, reliable source near you. For details on complete line, ask for *free* copy of Catalog AU-500.





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When ordering air brakes, specify Wagner Air Brakes the only system with the Rotary Air Compressor.

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Please send us a FREE copy of Catalog AU-500 on your complete line of brake service products.

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Vapor-proof

Warren Snap Seals prove that after six months of total immersion in water, all exterior conditions are excluded indefinitely. Results: lifetime service, minimum maintenance, no rusting or corrosion, longer bulb life, no inside lens fogging.



No time-consuming screws, clips or gaskets. Replace bulb in seconds.

to improve yo	ur safety lighting send toda	у
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MANUFACTURERS OF WARREN EMERGENCY VALVES & WARREN MANIFOLD VALVES

CCJ AT YOUR SERVICE

Continued from Page 9

short circuit. Lack of resistance to the high voltage jumping the windings is the cause. Apparently, the oil filled coils are sealed hot in production. When the coil cools, contraction of the oil may be sufficient to produce this vacuum. The simplest way to fix the trouble is to take off the coil and remove the small Philips screw inside the high tension lead tower. This permits air to enter the coil. Then the screw can be replaced. In most instances, it will be necessary to remove the coil from the engine to perform this operation.

#### Oil Capacity '58 Chevy V-8

THE OIL PAN capacity of the 348 cu in. Workmaster truck engine is six quarts without filter change and seven quarts with filter change. The 1958 Chevrolet Truck Owners Guide and 1958 Truck Shop Manual show incorrect lubrication capacity for this engine.

#### **Battery Dopes Void Guarantees**

ASSN. OF American Battery Manufacturers suggests that you check the battery manufacturer's guarantee before adding dopes or special electrolytes to batteries. According to the recommended domestic marketing standards of the association, addition of any chemical or solution other than approved water or battery grade sulphuric acid of proper specific gravity voids the guarantee.

#### **Hydraulic Tappet Trouble**

I MPROPER FUNCTIONING of hydraulic tappets is almost always due to dirt or sludge. Before installing new tappets, make sure that the engine has been thoroughly cleaned of all dirt and sludge. Failure to do this will affect the performance of any hydraulic tappet, new or used.

Another result of dirt or sludge is a noisy tappet. Noise may be caused by dirt holding the reservoir valve open and preventing the proper hydraulic action of the tappet. It may also be caused by abnormally high or low crankcase oil levels. A high oil level can produce

(TURN TO PAGE 16, PLEASE)



#### MORE ORIGINAL AND RECAP MILEAGE AT LESS COST

With Lee Super DeLuxe Highway Nylons you can be sure of it

You can have your truck tire economy as simple as 1-2-3 with Lee Super DeLuxe Highway Nylons. These outstanding tires give you 1) long original mileage; 2) extra recaps; and 3) lowest possible cost per mile. The three big advantages that add up to sure savings.

Not just *nylon*, but Lee Super-Tensile Nylon, goes into the construction of these tires. This tough cord provides the ultimate protection against the impact bruises, blowouts and moisture damage that take their toll of tires built with ordinary cord. And, during the Lee Super-Tensile manufacturing process, the cord is also treated with Double-Dip Flexlok, the super-adhesive that reduces the effects of heat and flexing and makes cord separation from the bond virtually impossible.

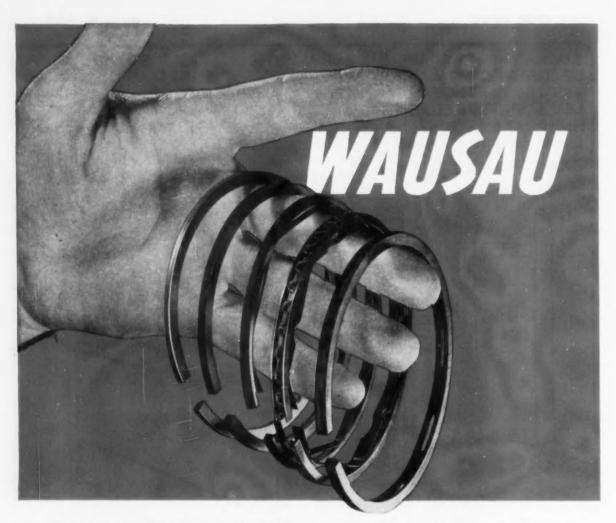
You get additional assurance of extra mileage with the wide, flat tread—made of the best type of smoked sheet natural rubber. Other Lee improvements in the tread design result in better traction and cooler running.

Equip your units with Lee Super DeLuxe Highway Nylons -tubed or tubeless-for more mileage and more recaps!

LEE RUBBER & TIRE CORPORATION

The Lee Super DeLuxe Highway. Whatever your truck tire needs, there's a Lee that's right for the job.

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Lee Rubbe	r & Tire Corpo	ration		
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Lee of Co	d me your fre nshohocken's	e catalog sho entire line of	wing truck tires.	



#### How to select a set of rings for heavy-duty engines



Top Ring — Should be specially alloyed for high impact resistance and fatigue and wear resistance. Example: WAUSAU HT-100 TORSIONAL COMPRESSION (Available in all standard compression ring types).



Second Ring — Should be designed for quick seating but with proper tension to insure proper blowby control and drag-free operation. Example: WAUSAU TAPER FACE COMPRESSION.



Scraper Ring — Scraper ring must be specially designed for proper balance between blowby and oil control functions (may be used with inner spring if desired). Example: WAUSAU XX SCRAPER.



Oil Ring — Should be scuff-proof and seat quickly. Multiple piece design should include center section designed to dissipate heat and prevent clogging. Example: WAU-SAU OILSAVR, the free-running ring with the safety center unit.



Bottom Ring — Should be auxiliary oil control ring properly ported for adequate drainage with adequate unit pressure for maximum oil control. Example: WAUSAU SUPERPORTOIL (M).

A heavy duty ring set should be designed so that all rings in it operate in harmony with each other, to do the complete job of giving long life and the full-rated horsepower of your engines. WAUSAU HCM Heavy Duty ring set does just that. It has proved its worth over many years in America's greatest automotive vehicles. See your jobber, or write

### WAUSAU MOTOR PARTS

2400 Eau Claire St., Schofield, Wis.









### Four Leading Trucking Executives Praise Results with RCA 2-Way Radio



Chester Yri Seattle Terminal Manager CONSOLIDATED FREIGHTWAYS INC

'RCA 2-Way Radio has increased our pounds per manhour. Our records show that in some cases we have increased as much as 6 to 8 stops per pickup man per day. With radio we are able to load our line-haul equipment more efficiently and improve our schedule departures. We are very pleased with our RCA installation in Seattle."



John M. Akers President AKERS MOTOR LINES, INC.

"Radio greatly improved the efficiency of our operation. We have found that the installation truck per day up to approxioperates pick-up and delivery service can use 2-way radio very effectively."



Robert Shenberger Terminal Manager MASON & DIXON LINES, INC.

"Our RCA Quiet Channel Equipof RCA 2-Way Radio has in- sure of fewer repeat messages in the past or the time involved creased the number of staps per i -more dispatched vehicles per in locating a phone booth where hour than with ordinary equipmately 25%. Any company that | ment. We're sold on RCA 2-Way | The use of RCA 2-Way Radio in Radio for trucking use."



Ted Venesh Director of Terminal Operations SPECTOR FREIGHT SYSTEM, INC.

"Radio has enabled us to reduce ment lives up to its name, cutting our terminal operating costs. We out all 'channel chatter,' We're ! don't have the dead time we had the driver can call the dispatcher. our pick-up and delivery service gives us more productive time."

#### Heightened efficiency, more stops per day...

Increased business and higher profits go hand-in-hand with radioequipped motor carriers. And most of these users choose RCA 2-Way Radio because of its reputation for quality and the better service it provides for customers. You enjoy such benefits as 6/12-volt interchangeability, lower standby battery drain, high quality voice transmission, and RCA Service. Be sure the equipment you buy offers all these benefits. Specify the RCA "Carfone" for your next installation.



#### RADIO CORPORATION of AMERICA

COMMUNICATIONS PRODUCTS

CAMDEN, N.J.

Radio Corporation of America Dept. H-35, Building 15-1, Camden, N.J. In Canada: RCA VICTOR Company Limited, Montreal

Please send me additional information on the use of RCA 2-Way Radio in the Trucking Business.

ZONE\_\_\_COUNTY\_\_\_\_

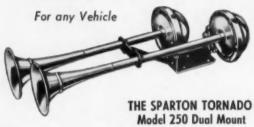
### Sparton

first choice of automotive engineers since 1900



#### **AUTO and TRUCK HORNS**

Air and electric — for neat, compact installation with least possible mounting space. Produce a pleasant and highly effective warning signal.



Designed to command the highway. Here's the positiveaction horn for safe driving. Simply connect to the electrical system and it's ready to go. No large installation cost — No maintenance problem.





#### **DIRECTIONAL SIGNALS**

Sparton-built to withstand vibration, shock and weather. Die Cast

No Rusting — No Corrosion.
Features continuous long-range visibility. Easily installed.

#### SIGNAL SWITCHES

Simple, foolproof, self-cancelling with Vinyl protected wiring. Backed by a lifetime guarantee.



Makers of quality

Automotive Equipment

since 1900





#### AT YOUR SERVICE

Continued from Page 12

foaming and air bubbles which readily pass the hydraulic piston. A low oil level can result in insufficient oil to properly fill the tappet reservoir.

Noise may be apparent when first starting an engine that has been idle for some time. If it disappears after a short time, it is the result of the leak-down of oil from the reservoir caused by push rod pressures from valves that were in the process of opening when the engine stopped. This is a normal condition and should be no cause for concern.

#### Chevrolet Rear Main Oil Seal

IN THE PAST, Chevrolet Shop Manuals have recommended removing the engine crankshaft to replace a rear main bearing oil seal. However, investigation reveals this lengthy procedure is not necessary. The seal may be removed and replaced with the crankshaft in place by following the procedure listed below:

#### Removal

- 1. Remove engine oil pan.
- 2. Remove oil pump assembly.
- Remove rear main bearing cap, discarding lower seal.
- Loosen the remaining bearing caps to allow crankshaft to drop a slight amount.
- Using a screwdriver or similar tool, push seal out of upper bearing sufficiently to permit removal with a pair of pliers. It may be necessary to rotate the crankshaft slightly.

#### Installation

- 1. Pre-form new upper seal in bearing cap.
- Insert piece of soft wire, such as tag wire, through new upper seal, approximately ¼ in. from end. Wrap end of the seal with the wire.
- Lubricate entire surface of upper seal with light coat of silicone lubricant and re-form this seal in the lower cap.
- 4. Remove upper seal from bearing cap.
- Insert wire attached to seal through seal opening in crankcase and around crankshaft.
- With the aid of a screwdriver or similar tool, start seal into opening.
- With aid of wire, pull seal into position while working seal back and forth at point where it contacts crankcase seal opening. (TURN TO PAGE 20, PLEASE)

Weigh All the Facts!



#### Truck Fleet records show a new set of ACs can save many times their cost in gasoline!

AC commercial Spark Plugs are designed and produced especially for truck operation! They deliver faster starts in all weather conditions . . . greater fuel economy on coast-to-coast runs or door-to-door routes. The exclusive AC "Hot Tip" heats up fast to burn away fouling carbon and oil deposits as soon as they form . . . stays cleaner longer. This means less truck down-time and fewer unscheduled replacements of spark plugs. When you weigh all the facts about spark plugs you'll say, "It's AC for me!" For a full-powered fleet, install AC commercial Spark Plugs in your trucks. Get them from your AC Supplier!



AC SPARK PLUG STATE ELECTRONICS DIVISION OF GENERAL MOTORS
Watch Walt Disney Studios' ZORRO every week on ABC-TV

**ACTION starts with** 



HOT TIP SPARK PLUGS



### "We run hot



**Buy and Specify Tubeless or Tube-Type** 



GOODFYEAD

MORE TONS ARE HAULED ON

COMMERCIAL CAR JOURNAL, July, 1958

a

1

C

### and heavy—yet cut tire costs in half!

And haven't had a sideslip since we switched to HI-MILER CROSS-RIB".

How T. L. Mydland Transportation Co., New Orleans, La., doubled tread-mileage and ended down-time problems.

"When you have to rush maximum loads, regardless of roads or weather, that's tough on tires.

"And when deliveries must be made within 15 minutes of schedule time," continues Fleet Owner T.L. Mydland, "those tires must stand up.

"AND-when you're stuck with those two factors on runs over all kinds of roads in Louisiana, Mississippi, Alabama and Florida-man-you've got PROBLEMS!

"We had them for sure. Our 35 tractors and 40 reefers haul perishable produce and groceries into areas that turn tire-maintenance men gray.

"In fact, in bad weather, we've had as many as 5 rigs in the ditch!

"But all this was before we went Cross-Rib.

"Cross-Rib has ended sideslip on our operation even on high-crown roads through the swamps. And we've said good-by to blowout and bruisebreak problems. Fact is, we haven't yet had any down time due to Cross-Rib tires!

"Mileage? Well-we considered ourselves lucky to get 50- to 70-thousand original mileage on previous tires-but with Cross-Rib we get up to 125 and 150 thousand BEFORE RECAPS!

"Yes - what with increased original mileage - increased recaps - and new lows in down time - Cross-Rib has cut our operation's tire costs MORE THAN HALF!"

T. L. Mydland Transportation Co. is just one of the important fleets now saving BIG with Hi-Miler Cross-Rib. Get the facts about many others from your Goodyear dealer—or Goodyear, Truck Tire Dept., Akron 16, Ohio.

Watch "Goodyear Theater" on TV-every other Monday, 9:30 P.M., E.D.T.





#### 3-T NYLON CORD

TEMPERED LIKE STEEL!
Like steel, tire cord must be tempered to be tough.
Goodyear's exclusive 3-T process, involving Tension,
Temperature and Time, triple-tempers cord to make it TRIPLE-TOUGH—tu give you longest tire life, lowest

Bi-Miler-T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

cost-per-mile!



TRUCK TIRES

GOODYEAR TRUCK TIRES THAN ON ANY OTHER KIND

### CCJ AT YOUR SERVICE

Continued from Page 16

Continue this until the seal is completely installed around crankshaft.

- With seal centered in opening, cut ends off 1/64 in, below bearing edge.
- 9. Install new lower oil seal in bearing cap.
- Tighten all bearing caps and torque to 105
   lb on six-cylinder models, 65
   lb on V-8's.

#### Get More Fuel Economy in Summer

SEVERAL carburetor adjustments can be made to insure more efficient engine operation in hot weather. For instance, on carburetors equipped with an automatic choke, both the choking action and the fast idle can be reduced slightly to favor fuel savings. Assuming that the choke is operating properly, the thermostatic spiral spring can be set one notch leaner in order to reduce the amount of time the choke is in operation. This will in turn re-

duce the amount of time the engine will run on fast idle.

Another adjustment that can be helpful in fuel saving, is the linkage adjustment provided for controlling the amount of fuel discharged through the accelerating or pump circuit. On carburetors so designed, the linkage can be adjusted to reduce the amount of fuel consumed during acceleration. Caution: Always approach carburetor modifications in small steps. Remember, any drastic change in fuel-air ratio will definitely influence engine performance.

#### **Vapor Lock Troubles**

HEN OUTSIDE temperatures rise in the 90's or higher, vapor lock or percolation can play havoc with the engine fuel system. Vapor locking tendencies can be aggravated by low fuel pump pressure or an air leak on the suction side of the fuel pump (flexible fuel line). Normally, a fuel pump can supply two to four times the maximum amount of gasoline required by the engine, but if the fuel pump pressure is low, or large quantities of air are sucked into the fuel system, the quantity available at the carburetor is below engine requirements. At the same time, the decrease in fuel pressure between the pump and the carburetor allows

(TURN TO PAGE 24, PLEASE)



# Tired of waiting for ring jobs to seat?

HASTINGS
Motor Engineered
PISTON RINGS

BEVELED CHROME-VENT
2C-144
314 × 712 - 51D.

Strate day of the strain of th

Hastings Piston Rings are covered by U.S. Patent Nos. 2148997, 2614899, 2565042, 2712971

### ...call for HASTINGS

Only Hastings Chrome-Vent Oil rings seat fast—3 to 4 times faster than any other chrome rings—and control oil, in tapered, out-of-round or re-bored cylinders!

The reason is Hastings' patented, beveled chrome rail. With less contact area to wear-in, it takes less time to break-in. Because it makes immediate fineline contact with the cylinder wall, you get positive oil control right now—and for the life of the job.

And the thick chrome cap extends around the bevel, to give at least 3 times greater chrome wearing surface. With the lighter inner-spring, made possible by the beveled design, Chrome-Vent makes gentle, soft-pressure contact with any cylinder wall.

On your next ring job, call for Hastings—the product of replacement specialists—and be sure of good trouble-free performance.

HASTINGS MANUFACTURING COMPANY, HASTINGS, MICHIGAN
Hastings Ltd., Toronto

Piston Rings, Casite, Wear Reducer, Filters, Spark Plugs

Tough on oil-pumping Gentle on cylinder walls



#### BEVELED CHROME-VENT

Rails make fineline contact with cylinder wall for a faster seat. Less area to wear-in means less time to break-in.



#### CONVENTIONAL CHROME RAIL

Originated by Hastings . . . now replaced by Hastings exclusive Beveled Chrome,

HASTINGS

Beveled Chrome-Vent Piston Rings



Provides Widest Range of Protection yet for every type of Drive Axle and Mechanical Transmission

### Mobilube 6X



### ... Multipurpose-Type Gear Lubricant for Today's Heavier Loads... Higher Road Speeds

Mobilube GX—the first commercially available multipurpose-type gear lubricant that protects commercial fleet axles and transmissions under the severest operating conditions—was developed to answer the greater strains imposed by increasing payloads and ever-higher road speeds.

In a series of 100,000-mile fleet highway service and torture tests over rough logging roads, Mobilube GX gave complete protection to gear tooth and bearing surfaces under the toughest service conditions. Such tests made by users and manufacturers are your assurance of Mobilube GX's ability to safeguard fleet axles and transmissions at all times . . . under all kinds of conditions!

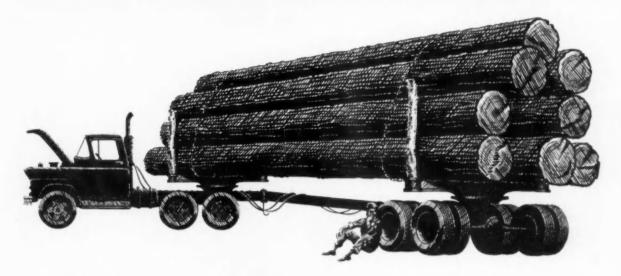


Another reason why you're Miles Ahead with Mobil

Available—film on fleet safety, maintenance. Call nearest Socony Mobil office.

SOCONY MOBIL OIL COMPANY, INC., and Affiliates: MAGNOLIA PETROLEUM COMPANY, GENERAL PETROLEUM CORPORATION

#### Timber! Watch out for falling profits!



Whatever you haul, a dead battery can cause profits to tumble. Protect yourself with a Delco Extra Duty. Get lowest battery cost per mile of operation!

That's right! The Delco Extra Duty keeps you moving at the lowest battery cost per mile of operation! Truckers from coast to coast have proved it . . . found that the Delco Extra Duty lives up to its unusual, long-life warranty. *Unusual* warranty? You bet.

For one thing, this Delco/General Motors warranty is good all over the U. S. and Canada. And, even more

important, it was written after the Extra Duty had endured tough tests of dependability at the General Motors Proving Grounds! Thus, it's more than a guarantee. It's a declaration—not of what the Extra Duty should do—but of what it will do. So next time you buy, make it a profit-protecting, money-saving buy. Wet or dry charge, choose the No. 1 truck battery in America—the Delco Extra Duty.



Quality built by Delco-Remy
available everywhere through
independent
distributors

associated with . . .

ON CBS RADIO—Lowell Thomas Newscast



### MARMAN SERVICEMASTER Joint Simplifies Manifold Connection

SERVICEMASTER V-Band Tube Joints are Self-Aligning, Long-Lasting and Ideal for Close-Quarter Tubing Installation

Here's a way to make sure that your quick repairs are also lasting repairs. With the SERVICEMASTER, just two bolts release or connect manifold tubing and other exhaust system or supercharger parts. No gaskets, no special tools, no critical alignment, yet every joint is leakproof, vibration proof . . . strong as the tubing it connects. SERVICEMASTERS cut both shop time and road failure to the bone. Get SERVICEMASTER Tube Joints at your dealer's . . . coast to coast. Mail the coupon below for the complete story.

MARMAN	DIVISION
<del></del>	eroquip Corporation

11214 Exp	ndustrial Sales Department position Blvd., Los Angeles, California proquip (Canada) Ltd., Toronto 19, C	
Please send me full information	on on the Marman SERVICEMASTER V	Band Tube Joints
Name		
Title		
Company		
Address		
		te

### COMMON CARRI CCJ AT YOUR SERVICE

Continued from Page 20

more bubbles to form, since additional heat is picked up in this part of the fuel system.

In addition to low fuel pump pressure, vapor lock can be appravated by small diameter fuel lines, right-angle bends, fuel filters joined to the carburetor, and by location of fuel lines too near the source of engine heat.

As soon as the engine returns to idle speed or stops altogether, excessive engine heat soaks into the fuel pump, carburetor and fuel lines. Laboratory tests show that in the carburetor bowl, fuel temperature may rise from 100 deg F to more than 160 deg F. At this point, gasoline begins to boil violently. In some carburetors bubbles of gasoline vapor pass up the main discharge nozzle carrying liquid gasoline with them, just as coffee rises in the percolator. The gasoline is then dumped into the manifold causing a flooded engine.

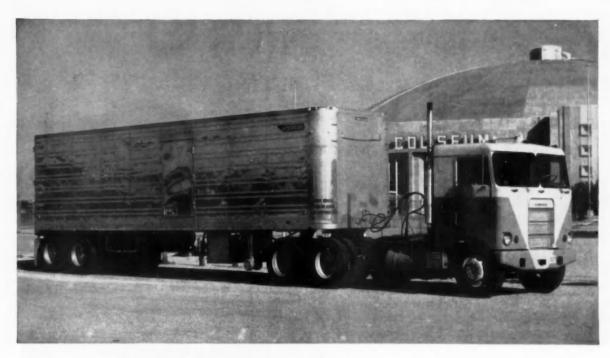
Here are a few suggestions that have proven helpful.

- 1. Shield fuel lines from excessive heat.
- 2. Install insulator gasket between carburetor and intake manifold.
- 3. Install electric fuel pump either tank-type (TURN TO PAGE 28, PLEASE)



"I KNOW why it won't close-my thumb's in there!"

R



### Geared by FULLER... Texas Dairy specifies R-96 ROADRANGER® Transmissions

When Milkhouse Cheese Corporation of San Antonio, Texas, purchased new Kenworth tractors recently, the firm specified Cab-Over-Engine Model 825's with Fuller R-96 ROAD-RANGER Transmissions.

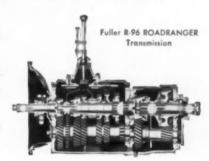
The all-aluminum 73-inch sleepercab tractors like the unit shown here, have a chassis weight of 12,790 pounds. Powered with 210 horsepower Cummins NHB diesel engines, these units have a payload capacity of 36,000 pounds.

Lou and Hyman Bernstein, president and vice-president of the firm, respectively, selected these customengineered Kenworths, with the 10-speed semi-automatic ROADRANGERS, tor long hauls of frozen commodities from the Rio Grande country to the Midwest. These same tractor-trailer combinations haul the Bernsteins' own dairy products from Wisconsin tor distribution in Texas.

Fuller ROADRANGER Transmissions give Milkhouse Cheese Corporation:

- Easier, quicker shifts—28% steps between ratios
- One shift lever controls all 10 forward and 2 reverse speeds
- No gear splitting—10 selective gear ratios are evenly and progressively spaced
- Engines operate in peak hp range with greater fuel economy
- Less driver fatigue—1/2 less shifting
- Range shifts pre-selected—automatic and synchronized
- Compact space-and-weight-saving economies—the most compact 10speed transmission available
- Transmission weight under the cab permitting more cargo to be carried on the payload axles

Get full facts on Fuller ROADRANGER Transmissions from your truck manufacturer or truck dealer now!





FULLER MANUFACTURING CO. Transmission Division - Kalemazon, Mich. But Brop Forge Bir., Milwanken I, Wis. - Shufer Azia Co., Louisville, Ky. (Subsidiary) - Soles & Service, All Products, West. Bist. Branch. Calland B, Cal. and Swithwest. Bist. Brince, Jolas 3, Ost.

### Surface flaws can't hitch a ride on TIMKEN® bearing rollers

(Another reason why TIMKEN® bearings are first choice with truck manufacturers)

WE overlook nothing to make sure Timken roller bearings are surface-perfect for smoother, longer performance. This extra test shown below assures even greater accuracy. We put rollers under a powerful lens in a search for possible surface flaws. Even the tiniest defect is enough to reject the roller. It's just one of the many inspections that help assure the high quality and smooth rolling of Timken® tapered roller bearings.

And it's another of the reasons behind Timken bearing quality. Right from the start, Timken bearings are geometrically designed to roll true. And they're preci-

sion-made to live up to their design—from steel to finished product. We make our own electric furnace fine alloy steel, to be sure it's the best. No other American bearing maker does. That's why truck manufacturers use more Timken tapered roller bearings than any other make.

That's a good tip for you. Specify *Timken* bearings when you need a tapered roller bearing replacement. They're your best bet. Get helpful service information in our free booklet, "The Care and Maintenance of Timken Tapered Roller Bearings in Automotive Equipment". Write Dept. JCC-7, The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".



SINCE THEY'RE BEST WHEN THE TRUCK IS NEW, THEY'RE BEST FOR REPLACEMENT, TOO!



TIMKEN

TAPERED ROLLER BEARINGS ROLL THE LOAD



### This Folder Shows How TRUCK BODIES SOLVE THE PROBLEMS You Always Thought HAD To Be A Part Of Your Business!

No matter what your business . . . LCT Truck Bodies offer more profit-making advantages than you ever believed possible.

They're more rugged, more durable, and offer greater cargo protection.

They cost less to buy-less to maintainand less to use.

The thousands of LCT truck bodies on the road have proved every claim made for their superiority. Let us prove their advantage to you.

(Dealer's inquiries invited)

#### FREE-Send For It Today!

Lyncoach & Truck Co., Inc. 3200 Chestnut St., Dept. 31 Oneonta, N. Y.

Please send me your free folder telling how the L-C-T Truck Body can give me more for less.

ACH & TRUCK CO., Inc.

TRUCK BODY MANUFACTURERS SINCE 1929

ONEONTA N Y

Name

Address

#### Fast tool repairs for Rlack & Decker tool owners



Genuine Black & Decke PARTS & SERVICE available near you

- \* Free Inspection
- \* Standard **B&D** Guarantee



Look in Yellow Pages "Tools Electric under for address of nearest FACTORY SERVICE BRANCH



USE and CARE HANDBOOKS are available for each B&D Tool. Specify tools you own, write: THE BLACE & DECKER MFG. Co., Dept. S4607, Towson 4, Md.

### **COMPRESSION TESTER**

Connection of MOTORITE to engine is by means of interchangeable adapters replacing the fuel injector in the cylinder. "Universal" adapter illustrated at left is adjustable for use on more than 100 popular makes and models of Diesels. Additional adapters are available from stock for all Diesel engines listed at right. For other Diesel engines special adapters are made to order.



indispensable for servicing busses, trucks, farm tractors, centractors' machinery, drill-ing rigs and other mobile Discel-powered equipment.

Leyland Massey-Harris Minneapolls-Moline Murphy Oliver Packard **Porkins** Waukesha

Allis-Chalmers

Buda Caterpillar

Cletrac

Cockshutt Cummins General Motors Hornischfeger Hercules Intern. Harvester J. I. Case John Deers

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COMPRESSION PRESSURE Key to Diesel Efficiency BUL. 692

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NAME	
COMPANY	

### AT YOUR SERVICE

Continued from Page 24

or line-type mounted as close to the fuel supply as practical.

#### **Touch-up Paint Problems**

BEFORE ANY WORK is done on a damaged painted surface, always wipe the area with a clean cloth soaked in a commercially prepared solvent-one which is designed to remove all traces of wax, polish, grease or any other foreign matter. Caution: Always discourage the use of gasoline as a metal cleaner. Aside from being a fire hazard, gasoline is likely to contain lubricating oil or tetraethyl lead that may interfere with proper paint ad-

Don't depend on sanding (wet or dry) to remove wax or polish, particularly polish containing silicone. Sanding only grinds foreign substances into the surface making it unsuitable for painting.

After metal work is completed, it is important that metal be primed at once. Do not let it stand any length of time (overnight) without priming. Remember, rusting starts instantly.

For sanding, select the grit which will do the job the quickest and scratch the surface the least. All rough areas should be cut down with a course sand paper first. Then sand the entire area to be painted with a fine grit paying particular attention to feathering out broken spots.

#### Transportation Day, May 19, 1958



Transportation Day of World Trade Week found CCJ's Mobile Office with four "big brothers" on Philadelphia's Reyburn Plaza. Event was sponsored by local chapter of Pennsylvania Motor Truck Assn. and included a display of radar and safety equipment.

Cos



### "Man, That's FAST Delivery!"

You can count on the Midland Man for the fastest possible delivery of parts for your air or vacuum braking systems. Your nearest Midland Distributor (there are over 250 in the U. S.) carries a complete stock of genuine Midland parts — the parts preferred and used by leading fleet operators because they're built for long, dependable, trouble-free performance. And his factory-trained service men will put your equipment's braking system in top condition and have it back, ready for the road, in jig time.

Ask your Midland Man about Midland's money-saving Factory Rebuilt Exchange Plan. You can run your Midland Compressors several hundred thousand miles — then have them re-built at the factory by specialists — and they'll carry the regular new equipment Warranty! The same goes for Midland valves, Hy-Power units, and other products.

Quick, near-as-your telephone Midland service means fewer breakdowns, more efficient use of all your vehicles . . . at a lower cost.

For the name of your nearest Midland Distributor, consult the "yellow pages" or write direct to the factory.

#### MIDLAND-ROSS CORPORATION

OWOSSO DIVISION • OWOSSO, MICHIGAN Export Department: 38 Pearl Street, New York, N.Y.

The Only Complete Line of Braking Equipment



Model 7.4 Air Compressor



Air-Hydraulic Brake Booster



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of

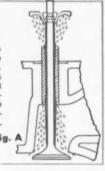
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1958

## NOW! STOP OIL THROUGH

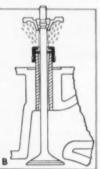
#### THE PROBLEM

See how globules of motor oil are being sucked from the rocker box through the valve guides—past the valve seats—and into the combustion chamber. Motor oil is burned up—wasted. This oil loss is caused by the normal operating vacuum created at the lower end of the valve guides...vacuum that increases sharply during deceleration when you take your foot off the "gas." This vacuum effect is present in both the intake and the exhaust manifolds.



#### THE SOLUTION

Here's the same overhead valve as shown in Fig. A —but with the new PC Valve Seal installed. Note the absence of oil leakage through the valve guide. This is because the Teflon oil control ring works very much like a piston ring. It keeps the higher pressure and oil in the rocker arm chamber from equalizing with the vacuum in the manifold. The contracting force of the ring on the valve stem prevents passage of air or oil between the stem and the guide. At the same time, this action distributes and deposits a very thin film of lubricant on the valve stem—increasing the life of both valve stems and valve guides.



#### New Perfect Circle development reduces operating expense of today's overhead valve engines

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Ten years have brought sensational increases in automotive engine horsepower. Today, nobody lifts an eyebrow at a 300 h.p. rating.

Fleet owners everywhere are well aware that these great increases in horsepower have called for an almost universal adoption of the overhead valve design. This change was necessary even though it was known that a penalty might have to be paid in the form of oil loss through valve guides.

That disadvantage of overhead valve design became more serious as compression ratios soared and as "deceleration vacuum" became more of a factor. In fact, quite often with worn overhead valve engines more oil is lost through

#### EASY TO INSTALL

...the only special tool that may be required is a valve guide cutting tool.







### PERFECT CIRCLE

Perfect Circle Corporation, Hagerstown, Indiana;

the valve guides than past the pistons. The nature of this problem is clearly shown in Figure A. See chart.

Everything considered, it's been a persistent and growing challenge. The problem has been solved at last by Perfect Circle engineers after years of intensive study, research and testing. The answer is the new Perfect Circle Valve Seal.

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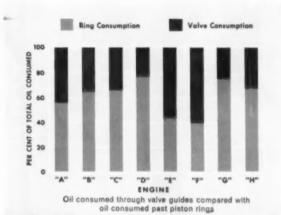
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Surprisingly simple in design and in function, the PC Valve Seal was refined through collaboration between Perfect Circle's research team and the engineers of interested engine manufacturers.

Perfect Circle Valve Seals are now available for popular makes of cars and trucks. Call your local automotive parts distributor for the latest list of engines for which PC Valve Seals are available.



Whenever valves are ground or engines are overhauledinstall Perfect Circle Valve Seals to restore and maintain top oil economy.







PC Valve Seals adjust to valve stems of a wide range of diameters and therefore accommodate a wide range of stem-to-guide clearances. Because of this, PC Valve Seals can handle severe cases of oil loss through valve guides. They often save valve guide replacement or reaming and replacement with oversize-stem valves. PC Valve Seals come packaged in sets in a handy reusable plastic box...complete with installation instructions.

### PAT, PEND,

The Perfect Circle Co., Ltd., Don Mills, Ontario, Canada

Produced by the makers of Perfect Circle piston rings and other

Power Service products

COMMERCIAL CAR JOURNAL, July, 1958



### Happy drivers help your business ... riding on BOSTROM

Very likely your drivers contact your customers and the public more than anyone else in your company. Are they being courteous and helpful . . . are they always "selling" for you?

Well, if they're weary and worn out, probably not. Bouncing around in a truck all day isn't the easiest way to keep a well-regulated, irritation-free disposition.

The way to make sure your drivers have a "good will" disposition is to give them Bostrom "Level-Ride" 80 seats to ride on. This "human-engineered" suspension seat takes away 80% of road shocks and vibration—providing a 5-times-better ride. Fatigue

and irritability fade out of truck driving.

In Bostrom "Level-Ride" 80 seats, giant rubber torsion springs soak up shock under the seat instead of in the driver's body. Thus, fatigue is greatly reduced . . . efficiency, productivity and disposition are improved. Only Bostrom "Level-Ride" 80 seats offer these advantages. More than 135,000 Bostrom suspension seats in use prove their value.

You can obtain "Level-Ride" 80 seats on every make of new truck. There's also a "Level-Ride" 80 available to fit your present trucks—for replacement now. See your truck dealer or check with your Bostrom parts jobber.

Want a demonstration? Write and we'll arrange one for you.



**BOSTROM CORPORATION** 

133 West Oregon Street, Milwaukee 4, Wisconsin



JULY 1958 FLEET HIGHLIGHTS AS REPORTED BY COMMERCIAL CAR JOURNAL

MR. EXECUTIVE, The federal tax picture is clear—at least until July 1, 1959. Biggest news is that the 3% tax on freight is dead. As signed into law by President Eisenhower late last month, the 52% corporate income tax, the 10% excise on passenger cars, the 8% excise on automotive parts and accessories, the 10% passenger transportation tax are continued for the next 12 months. Income from these levies all goes into the Treasury's general fund. Not affected by the new law are other tederal highway use taxes earmarked for the Highway Trust Fund. Only exception is the 10% excise on new trucks and buses which is split 50-50 between the Highway Fund and general fund. Incidentally, repeal of the 3% freight tax in some cases will result in increased common carrier tonnage as private carriers lose a cost advantage.

SAFETY REGS continue to be a hot subject among fleetmen. When Truck-Trailer Manufacturers Assn. meets the middle of this month for its annual Summer Meeting, they'll be the first subject on the agenda. Meeting with the trailer men at this time (at The Homestead, Hot Springs, Va.) will be equipment experts from ATA's Regular Common Carrier Conference and Automobile Manufacturers Assn. After request from ATA and TTMA, the ICC has extended until Oct. 1, 1958, the deadline for YOUR comment on the extensive changes proposed in the safety rules. Mail one signed original and 14 copies to Harold D. McCoy, Secretary, Interstate Commerce Commission, Washington 25, D. C. The pending amendments to the Regs presently cover (1) brake warning devices and gages, (2) parking brakes, (3) "out of service" defects, (4) lighting and (5) air reservoirs, fifth wheels, locking devices, tire loads and cargo securing.

SAFETY CHECKS by ICC inspectors on trucks and buses for compliance with the Commission's Safety Regs continue to show the industry in a bad light. Early in April, 6266 buses were checked. Of these, 4429 or about 71% were reported as having at least one driver or mechanical defect or deficiency. Things were better in the "out of service" category with only 193 or 3% falling into this group. An early May truck check resulted in 7478 out of 9308 (80.3%) showing some defect or deficiency. "Out of Service" went 1916 (20.6%) of those checked. ICC invited Commercial Car Journal's Mobile Editorial Team to a safety check at Perryville, Md., middle of last month. Coming next month is a first hand report on what went on there ... plus up-to-the-minute comment on what's being done and what you can do about safety checks, safety inspections and proposed changes in the Safety Regs.

#### **DETROIT DISPATCH**

construction Equipment worn out in the first two years of the highway building program (up to July 1) is estimated at 97,000 units — 53,000 from contractors' fleets, 44,000 from highway department fleets.

SPENDING BY TRUCK fleets this year for new vehicles, fuel, parts, accessories, tires and tubes should reach \$7½ billion. Estimate was made middle of last month at U. S. Chamber of Commerce's meeting on "How Business Can Speed the Upturn." Also, says the report, ". . an indeterminate but very substantial investment in construction and equipping new terminals will be recorded."

TRUCK PRICES ARE expected to increase. . . . especially in the lines with annual new models. Reasons are current auto maker-union negotiations and the expected hike in steel prices.

continental trailways has added 41 more German-built buses to its fleet. Built by Kassbohrer GmbH, the new "Silver Eagles" are similar inside to the "Golden Eagles" built by the same maker and put into service earlier by Continental (Sept. '57, page 80). Principal difference is mechanical. New coaches are for longer, through trips

POWER STEERING WENT on a record 38.1 per cent of 1957 model passenger cars, says the 20th edition of Ward's Automotive Yearbook. Also, says Ward, 79.9 per cent of '57 models had automatic transmissions, and 32.9 per cent were of 2 or 4-door hardtop convertible styling.

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DIFFERENTAL DUAL WHEEL assembly is being developed by a midwest company. It is said to offer up to 33 per cent more payload capacity through more equal weight distribution. Another feature permits each tire to roll independently to reduce road scuffing, improve steering. Design permits double braking capacity to be built into the unit.

CHEVROLET WILL offer Delco-Remy's new alternating current generator (June, page 160) on '59 model trucks.

MILEAGE PAYMENTS to salesmen driving their own cars on company business now average a record 8.84¢ per mile . . . as compared to 7.72¢ per mile a year ago. The survey, reported by Emkay, Inc. (auto fleet leasing firm), shows payments ranging from 6.5 to 11¢ per mile. Of over 100 fleets covered, 42 per cent paid 8¢ per mile.

#### **WASHINGTON WATCH**

**AMERICAN TRUCKING ASSNS. CELE-BRATES** the 25th anniversary of its founding in October.

ST. LAWRENCE SEAWAY officially opened first of this month with ceremonies at Massena, N. Y. It could mean more tonnage for you. Check the article beginning on page 66, this issue, to see how your fleet fits in the picture.

**DRIVER OF THE YEAR** for 1957 is Reuben C. Thomas, driver for Sessions Co., Enterprise, Ala. For his story, see page 79 this issue.

**CHANGE IN LEASING** Regs was proposed by ICC last month. Sec. 207.6 (b) would be revised to permit authorized carriers to rent equipment to pri-

vate carriers or shippers... providing no provision is made for drivers and the lease does not result in effect to a rate rebate.

HOT CARGO clauses in labor agreements do not protect unions from secondary boycott charges. U. S. Supreme Court's decision annonunced middle of last month affirms an earlier National Labor Relations Board opinion.

TWO-WAY RADIO users in the 452.95 and 457.95 Mc frequencies may renew authorizations for these frequencies on a yearly basis, says Federal Communications Commission. They may do so until their frequency is assigned in the Railroad Radio Service but not beyond April 1, 1963. Better bet, says

HERCULES MOTORS CORP. HAS purchased Hall-Scott Engine Division, Berkeley, Cal. Plans are to continue Hall-Scott engine production at Hercules' Canton, Ohio, facilities. Parts will be available through both Hercules and Hall-Scott distributors and branches.

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STANDARDS FOR LP GAS engine fuel are needed says Carl Abell, Editor of BUTANE-PROPANE NEWS. Says he, there's too much propylene being added to propane gas. This causes detonation in high-speed, heavy-duty service resulting in piston burning.

BENDIX-WESTINGHOUSE NOTES that jail sentences and heavy fines were imposed upon principals of a firm convicted in federal court of selling the U.S. Army counterfeit brake diaphragms and other air brake parts.

REEFER RATING project by Truck-Trailer Manufacturers Assn. and National Bureau of Standards has one last problem to be solved: How to measure in the laboratory the heat gain inside the trailer due to air leakage. Forward motion of the trailer pushes air inside—accounting for 32 to 69 per cent of the total heat load in three trailers that were road tested.

FCC, is to convert to new frequencies available in the Land Transportation Services.

WHITE MOTOR CO. HAS again renewed its support of the ATA Foundation to the tune of \$50,000. During the past 12 months, White's participation included magazine advertising, TV coverage of the National Truck Roadeo plus an interview with Guy W. Rutland, Jr., president of ATA.

FEDERAL HIGHWAY program begun in 1956 completed its second year on June 30. While year-end figures were not available at press time, the progress report beginning on page 82, this issue, will give you an idea of what has been accomplished in the 24-month period.

### TRUCK TONNAGE

FIRST OUARTER truck tonnage was down 5.6 per cent as compared to first quarter 57, says ATA's Research Dept. First quarter tonnage index stood at 178-exceeded by only two other years (1956 and 1957) since 1940. First quarter details by regions and commodities appear on page 110 this issue. April tonnage was up 1.9 per cent as compared to March and down 5.4 per cent as compared to April '57. For the first four months

Month	Change from Previous Month	Change from a Year Age				
April, 1958	+ 1.9	- 5.4				
1st Quarter '88	1241	- 5.6				
March, 1958 February, 1958 January, 1958	+ 6.6 - 8.5 + 9.3	- 7.6 - 8.1 - 5.3				
4th Quarter '57		+ 0.9				
December, 1957 November, 1957 October, 1957	-10.2 -14.4 + 5.6	+ 0.2 - 4.8 + 0.2				
3rd Quarter '57	- 10	+ 6,5				
September, 1957 August, 1957 July, 1957	- 3.6 + 7.5 + 1.3	+ 4.8 + 2.5 + 7.3				
2nd Quarter '57.		- 1.7				
June, 1957 May, 1957	+ 8.6 + 2.7	- 3.9 0.0				

of 1958 the tonnage drop was 6.6 per cent as compared to the first four months of '57. Despite the overall tonnage drop, April gains were registered in the following regions—Rocky Mountain—up 7.6 per cent as compared to April '57; Southwestern—up 4.8 per cent; Pacific—up 3.3 per cent.

### TRUCK AND BUS PRODUCTION

	For Weel	ks Ending	Year to Date					
Chevrolet G. M. C. Diamond T Divco Dodge and Fargo Ford F. W. D. International Mack Studebaker White Willys Other Trucks	June 7 6,131 1,084 99 1,289 3,611 37 1,367 274 258 138 1,855 50	May 31 5.077 1.133 85 48 1.218 4.172 25 1.158 234 180 297 1.372 60	1958 131,467 28,221 2,398 1,272 25,916 101,969 619 44,075 6,602 5,154 7,838 36,156 1,400	1967 165,109 31,470 2,163 1,685 37,646 163,604 9,752 7,758 5,626 9,032 33,623 1,996				
Total Trucks Buses	16.193 33	15,059 57	393.085 1.571	509,965 2,027				
Total Trucks and Buses	16,226	66.587	394.656	511.092				

Source: Automobile Manufacturers Association,

### IN THIS ISSUE

- TONNAGE . . . St. Lawrence Seaway opened July 1. Does it mean more freight for you?—page 66
- RESEARCH . . . Consolidated uses it to cut operating and equipment costs—page 70
- TRANSMISSION . . . How Allison's "Torqmatic" is making out in on-highway service—page 72
- ENGINES . . . Central Motor Lines uses interesting techniques to streamline overhauls—page 76
- **SAFETY** . . . Inland Petroleum provides incentive with a driver bonus—page 80
- HIGHWAYS . . . Are you getting your money's worth for the use taxes you're paying?—page 82



**TRAILER REFRIGERATION.** trailers for highway building and containers are the big subjects for discussion at Truck-Trailer Manufacturers Assn. annual Summer Meeting . . . in addition to ICC Safety Reg analysis (page 33). Meeting takes place at The Homestead, Hot Springs, Va., July 14-16.

**CONTAINERS GET** more attention July 30. American Standards Assn. invites all concerned to attend a meeting at that time to discuss standardization of sizes of pallet, cargo and van containers suitable for interchange between truck, plane, ship or rail. If you'd like to attend, the address is 70 East 45th St., New York 17, N. Y.

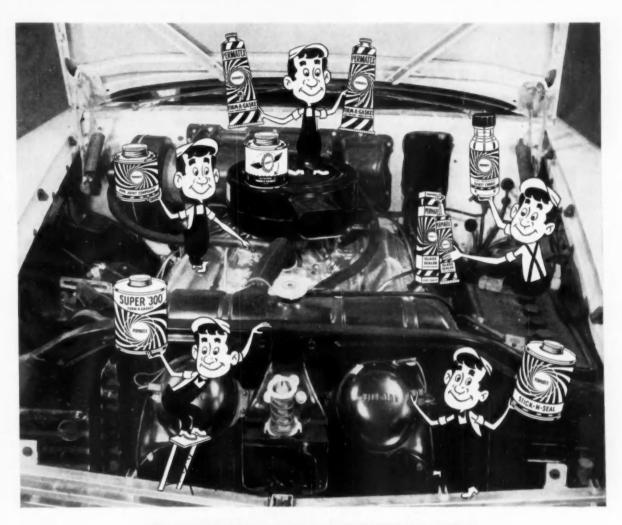
WEST COAST FLEETMEN ARE marking Aug. 11-14 on their calendars. Those are the dates of Society of Automotive Engineers' National West Coast Meeting. Both on-highway and off-highway equipment will be reported on . . . as well as vehicle research laboratories. One highlight is a visit to the Army's Yuma, Ariz., desert testing. Other sessions are scheduled for the Ambassador Hotel, Los Angeles, Cal.

REEFER FLEET OPERATION IS subject of a three-day conference sponsored by ATA's Common Carrier Conference—Irregular Route. It'll be held at Michigan State University, East Lansing, Mich. On the program are refrigeration theory, equipment, bodies and insulation . . and time for the "students" to fire questions at the "experts." For details, write Common Carrier Conference-Irregular Route, 1424 Sixteenth St., N.W., Washington 6, D. C. Dates are Aug. 24-28.

AUGUST IS THE MONTH when test traffic starts looping-the-loop around the test highway at the AASHO Road Test, Ottawa, Ill. This is the date Federal Highway Administrator Tallamy told Congress. After two years of single and tandem axle testing, Tallamy says military traffic will be run over the test sections for "further destruction."

FIRST QUARTER BUSINESS WAS good, reports Ryder System and National Van Lines. Ryder says first quarter gross was up 34 per cent over first quarter '57 with net income after taxes up 26 per cent for the same period. NVL had first quarter loadings exceeding first quarter '57 by 35 per cent. Revenue for January was 58 per cent ahead of Jan. '57. For February the increase was 33 per cent over Feb. '57, and for March it was 8 per cent more than Mar. '57. Latest available production data for '58 as compared to '57 is shown below:

In thousands					Truck Trailer Shipments		Bus Factory Sales—Domestic		Truck and Bus Tires						
of units, except bus sales are in actual		w Truck Truck Factory Sales—Domestic	Replacement Shipments						Original Equip. Shipments		Inver-				
numbers 4	April	4 Months	April	4 Months	April	4 Months	April	4 Months	April	4 Months	tory End of April				
1958	63.4	220.4	56.0	231.7	3.8	14.4	290	1191	665.9	2544.9	281.7	1081.6	3607.1		
1957	75.4	269.2	84.4	304.8	5.5	21.1	410	1208	770.5	2748.4	437.6	1415.4	3486.2		



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### "DOLLAR FOR DOLLAR YOU GET MORE WITH FORD...AND I'VE BOUGHT THEM ALL"

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"Our all-Ford fleet of 34 trucks delivers over 400,000 pounds of groceries, produce and frozen foods each day. They serve 250 franchised stores within a 100-mile radius of Sharon."

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"Increased payload capacity obtained with Ford's rugged chassis and the larger aluminum bodies make it possible for one unit to serve two stores per trip."



"Greater maneuverability in city traffic helps us maintain rigid schedules. And our drivers sure appreciate the extra comfort of the Custom Cab on runs like this."



"We require 30% fewer trucks to make the same number of deliveries since we started buying Fords in 1955. All of our tractors and trailers are completely interchangeable."



"Delivery costs have been cut by 18% thanks to dependable Ford F-700 trucks with 15-foot aluminum van bodies, and excellent drivers that are well satisfied with their Fords."



"Less time on the road and more deliveries per trip are but two of the benefits resulting from the use of Heavy Duty V-8's and 2-speed rear axles in our Ford trucks."

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"Not one delivery has been missed because of a truck failure since we switched to Fords. The combination of a fundamentally sound truck and planned preventive maintenance pays off."



"It's a pleasure to do business with our local Ford Dealer because he offers the most truck for the dollar—and they are always ready to serve after they sell," says M. E. Epstein.

# Bring extra savings to your business . . . make your next truck a FORD!

Official registrations for 1957 show that American business buys more Ford trucks than any other make. There are many reasons for this popularity ... many reasons for you to make your next truck a Ford!

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Value-packed Ford Tilt Cab trucks offer exceptional payloads, maneuverability, service accessibility and driving ease . . . they're America's most popular tilt-cab line, by more than two to one.

Only Ford offers the economy of Short Stroke power in all engines, Six or V-8. And Ford's Heavy Duty V-8's offer new, advanced durability features. The modern Ford Six, available in Light and Medium Duty F- and P-Series trucks, is equipped with an economy carburetor that gives you up to 10% greater gas mileage. It's plenty peppy, too, with more horsepower per cubic inch than any other six in its class.

Ford's rugged cab and chassis construction means these new '58s are built to last. Every Ford has safety glass in every window. All this plus the proven fact that Ford trucks last longer adds up to America's No. 1 truck value.

See your local Ford Dealer for the latest in '58 trucks or the best in A-1 used trucks.

# FORD TRUCKS COST LESS

LESS TO OWN . . . LESS TO RUN . . . LAST LONGER, TOO!

### DATES and DOINGS

#### JULY

- 11-12-Motor Transportation Assn. of South Carolina, Annual Convention, Ocean Forest Hotel, Myrtle Beach, S. C.
- 14-16-Truck-Trailer Manufacturers Assn., Summer Meeting, The Homestead, Hot Springs, Va.
- 24-25-State Truck Association Managers, American Trucking Assas,, Annual Meeting, Statler Hotel, Hartford, Conn.
- 24-26—Mississippi Transport Assn., Annual Meeting, Hotel Buena Vista, Biloxi, Miss.

### AUGUST

- 8-9-Illinois State Truck Roadeo and Motor Equipment Show, Exposition Hall, International Amphitheatre, Chicago, Ill.
- 11-14—Society of Automotive Engineers, West Coast Meeting, Ambassador Hotel, Los Angeles, Cal.
- 17-21st All-American Soap Box Derby, Akron, Ohio.
- 27-38—Automotive Parts Rebuilders Assn., Trade Show and Convention, Conrad Hilton Hotel, Chicago, Ill.

#### SEPTEMBER

5-6—Tri-State Rondeo, sponsored by Del., N. J., and Pa. Motor Truck Assns. and Council of Safety Supervisors, Riss Terminal, Trenton, N. J.

- 8-11—Society of Automotive Engineers, Farm, Construction, and Industrial Machinery Production Forum and Engineering Display, Milwaukee Auditorium, Milwaukee, Wis.
- 10-12—Michigan Trucking Assn., Annual Convention, Pantlind Hotel, Grand Rapids, Mich.
- 11-12-Minnesota Motor Transport Assn., Annual Convention, Leam-
- ington Hotel, Minneapolis, Minn. 11-13—Indiana Motor Truck Assn., Annual Convention, French Lick-Sheraton Hotel, French Lick, Ind.
- 11-13-Virginia Highway Users Assn., Annual Convention, The Chamberlin Hotel, Old Point Comfort, Va.
- 15-16-Wisconsin Motor Carriers Assn., Annual Meeting, Lake Lawn Lodge, Delvan, Wis.
- 16-17—American Automobile Assn., Annual Meeting, Palmer House, Chicago, Ill.
- 18-19—Central Motor Freight Assn. of Ill., Annual Convention, Conrad Hilton Hotel, Chicago, Ill.
- 18-20-Pennsylvania Motor Truck Assn., Fall Meeting, Galen Hall Hotel and Country Club, Wernersville, Pa.
- 25—Motor Transport Assn. of Connecticut, Annual Meeting, Hotel Statler, Hartford, Conn.
- 25-27-Idaho Motor Transport Assn., Annual Convention, Sun Valley Lodge, Sun Valley, Idaho
- 26—Iowa Motor Truck Assn., Annual Meeting, Savery Hotel, Des Moines, Iowa
- 29-Oct. 1—American Road Builders' Assn., Sixth Annual National Conference for County Engineers and Officials, Concord Hotel, Kiamesha Lake, N. Y.

#### OCTOBER

- 12-15-American Transit Assn., Annual Convention, Roosevelt Hotel, New Orleans, La.
- 22-24-National Assn. of Motor Bus Operators, Annual Meeting, Boca Raton Club, Boca Raton, Fla.

#### NOVEMBER

16-21-American Trucking Assns., Annual Convention, Miami Beach, Fla.



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Right off I know that no matter what make and model truck I want to fit, no matter what style and capacity tank I want, I'll find just what I'm looking for in Snyder's complete line of Safety Tanks. And I know that each Snyder Tank is designed, built and tested to the highest quality standard in the industry. I rely on them—so can you!

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# Rigid quality control in manufacturing the Wagner ROTARY AIR COMPRESSOR

and other air brake components improves operating efficiency and service life

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The superior operating features of Wagner Rotary Air Compressors are directly related to Wagner's Rigid Quality Control manufacturing program. Rigid quality control throughout every stage of manufacturing is an important reason why owners have so little trouble when the compressors are put into operation. At the factory every unit must pass careful inspection and run-in tests to assure that each compressor provides an adequate supply of air pressure at all times, with fast air recovery; and can provide safe, dependable performance and long service life.

If service should be needed—the entire compressor can be completely disassembled, serviced and put back into operation in a few hours right in your own shop. Wagner factory service branches in 23 major cities and the vast network of Wagner Air Brake Distributors throughout the United States and Canada are near at hand to serve you promptly and efficiently on any air brake need.

Remember-when ordering new equipment, be sure to specify Wagner Air Brakes.



1. Accurate machining assures the smooth cool operation of the Wagner Rotary Air Compressor. Close dimensions on all planes of the roter eliminate vibration... permit can pressor blades to function smoothly at high speeds.



2. Accurate machining and gauge testing of the stator, as well as the roter, also contributes to the rotery compressor's ability to operate for long periods of time withou delevoping leaks or losing efficiency.



3. Compressor shafts are given the "cold box" treatment. When exposed to very low temperatures, the shaft diameter contracts. This altered shaft diameter allows proper insertien into a heated rotor to form a strong, compacific with.



4. Compressor rotors are subjected to high even temperatures to expand rotor diameters. Shafts and rotors joined together under these extreme conditions resume their original relative size to create on extra strong assembly.



5. Assembled rotary compressors are hooked up to air lines and operating air pressure is applied for leakage tests. While holding pressure, entire compressor is submerged to defermine whether any air is excepting.



6. Every Wagner Rotary Air Compressor is given a rigorous "run-in" test to determine its resistance to everheating and its over-all performance. Running temperatures, vibration, noise and air output are carefully noted and



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# Takes a beating without chipping...



"PAINT PILE DRIVER." As a Du Pont chemist trips the trigger, a weighted hammer comes crashing down on a panel painted with "Dulux" Enamel. The metal is repeatedly dented, but "Dulux" does not chip. That's why "Dulux" stands up so well under slam-bang loading and flying gravel on leading fleets.

42

# no wonder Du Pont DULUX Enamel is specified for leading fleets

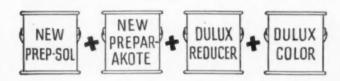
To build a reputation for durability on trucks and buses, a finish must graduate at the head of its class from the school of hard knocks. And look at the hard knocks "Dulux" Enamel takes for a final exam! When that "paint pile driver" in the photo at left pounds dent after dent into the panel without chipping the "Dulux" Enamel finish, the lab knows its ready for anything on the road.

**OTHER PUNISHING TESTS** insure excellent "Dulux" resistance to fog, dew, rain, salt air, ice, blazing sunshine and constant vibration. As a result, "Dulux" has become the *standard* of durability in the toughest commercial service—on delivery and transport trucks as well as on local and long-distance buses.

**REAL ECONOMY**—When you put Du Pont "Dulux" on your fleet, you take advantage of the continuing experience of the world's greatest paint laboratory. You get tested performance for easy working in the paint shop...long, trouble-free life out of the paint shop. That's economy in the truest sense of the word.

And when you see how "Dulux" Enamel snaps back, rich and lustrous, at every washdown, you'll know you picked a winner to carry your company colors. For lasting good appearance that earns lasting good will, specify Du Pont "Dulux" Enamel.

### IT PAYS TO USE THE COMPLETE "DULUX" SYSTEM



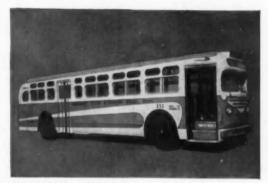
## **Du Pont "Dulux" Enamel**



BETTER THINGS FOR BETTER LIVING ... THROUGH CHEMISTRY



CARNATION MILK TRUCKS say "dairy-fresh" at a glance, with their super-tough finish of "Dulux" Enamel, Carnation has used "Dulux" for over 15 years, finds it pays off in more road time, less day-to-day maintenance cost.



GREEN BUS LINES, INC., in New York, reports, "'Dulux' has proven to be the most economical finish because of its toughness, durability and color retention." They also note that it reduces costs and time in the paint shop.



GRIESEDIECK BEER TRUCKS do a good job of advertising traditionally fine GB quality, with "Dulux" Enamel keeping the big "rolling billboards" bright through 10-state deliveries in temperature extremes, industrial fumes and traffic.

# Fleetman's LIBRARY

REVIEWING THE BEST IN CURRENT PUBLICATIONS ON MAINTENANCE, EQUIPMENT
AND SAFETY OF INTEREST TO TRUCK, BUS AND CONSTRUCTION FLEET OPERATORS

### **Brake Service Manual**

from Grey-Rock Division of Raybestos-Manhattan, Inc.
Manheim, Pa.

is a 60-page illustrated booklet covering all types of brake systems. It has adjusting and relining instructions for all makes of cars, and all types of truck, trailer and bus brakes. There is a trouble shooting section for each type of brake together with a tractor-trailer air brake check system. The manual is available through Grey-Rock distributors and is priced at \$3.00.

### **Motor Transportation**

from The Ronald Press Co. 15 East 26th St., New York 10, N. Y.

is a text book designed for motor carrier personnel and traffic managers. It covers many important problems and issues facing the trucking industry today. This 700-page book is divided into three main sections. Part I deals with a study of motor transportation, the highway system and administration and finance as they affect interstate trucking operations. Part II is devoted to principles and operating procedures common to all types of motor carriers. Part III covers the field of state and interstate regulation of the trucking industry with emphasis on size and weight limitations. This thorough text costs \$7.50.

### **Truck Tire Data Book**

from The B. F. Goodrich Co. 500 South Main St., Akron, Ohio

explains nine steps operators should follow to increase tire highway service. This 42-page book also contains load and inflation tables and safety rules to follow when servicing truck tires. Write for a free copy.

### **Brake Data Booklet**

from Russell Mfg. Co. Middletown, Conn.

has the latest information for servicing various brake systems. One chapter of the 30-page booklet has suggestions for brake system troubleshooting. Other chapters cover drum scoring, good shop practices, bonded brake shoe grinding and brake lining wear-in. Ask for "Modern Brakes." It's free.

### **Materials Handling Guide**

from Book Division, Chilton Co. 56th and Chestnut Sts., Philadelphia 39, Pa.

is entitled "Materials Handling Applications" and is a companion book to D. Oliphant Haynes' earlier book called "Materials Handling Equipment." The new book has 381 pages with over 1000 illustrations showing materials handling uses in all fields. The book tells how to solve materials handling problems and cut operating costs. A large section is devoted to truck loading and truck terminal materials handling applications. This \$12.50 book is a thorough guide to fleet operators who have materials handling problems.

### Tire Service Manual

from Cooper Tire and Rubber Co. Findlay, Ohio

gives information on tire matching, load inflation and load distribution. Other features include a cost-per-mile chart and a listing of various type wheel rims and the advantages of each. Write Dept. 18 at the above address for free copies.

### Size and Weight Booklet

from Four Wheel Drive Auto Co. Clintonville, Wis.

is the 1958 edition. In it are listed the size and weight restrictions for all states. Included are dimensions, axle spacing, maximum GVW's and GCW's, and special regulations pertaining to buses and auto transporters. Free copies are available from FWD at the above address.

### **Tubeless Tire Repair Folder**

from the Dill Mfg. Co. 700 East 82nd St., Cleveland 3, Ohio

shows in step-by-step pictures, the correct way to repair passenger car and tubeless truck tires. Included in the folder are suggestions for cutting repair time. The folder can also be used as a wall chart in the shop. On the last page is a listing of necessary tools and supplies needed for proper tubeless tire repair work. The folder is free.

(FOR RECENT MANUFACTURERS' LITERATURE, SEE PAGE 116)

# ALCOA HAS THE RIGHT COMBINATION

For 15 years, Alcoa has lived with leading engine and equipment builders and bearing manufacturers to solve their bearing problems. From this experience, we learned that the ideal bearing material can't excel in one way and fail in another. For example, a bearing material must be hard enough to withstand

wear, yet soft enough to embed; strong enough to carry heavy loads, yet ductile enough to conform. In short, the best bearing material must have the right combination of features to meet demands from many directions. We were certain from the start that aluminum, because of its inherent properties, must hold the answer, and so we launched a long series of tests. After more than 400 different aluminum alloys had been tried, we found the ones we wanted: the aluminum alloys with the right combination of advantages. These Alcoa® Aluminum bearing alloys are now used in solid cast aluminum bearings that: Withstand Heavy Loads . . . up to 10,000 psi on projected area. Run Cooler . . . Because aluminum is the best heat conductor among bearing materials, aluminum bearings run cooler . . . as much as  $20^\circ$  by actual test. Conform Readily . . . Aluminum has good ductility, conforms readily to misaligned shafts and nonparallel pins to reduce unit loading, extend bearing life. Have Ideal Embeddability . . . Aluminum embeds dirt particles better than bronze, but not as deeply as babbitt; particles roll out easily and are trapped by filters. Resist Corrosion . . . Aluminum bearings are unaffected by corrosive additives in oils and need no protective coatings. Offer Design Flexibility . . . Aluminum's combination of structural properties allows great flexibility in design. Why not have the right combination of features working for you in all your bearing requirements? Call your nearest Alcoa sales office for further information. Or, write Aluminum



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# PRIOR FIRST AGAIN



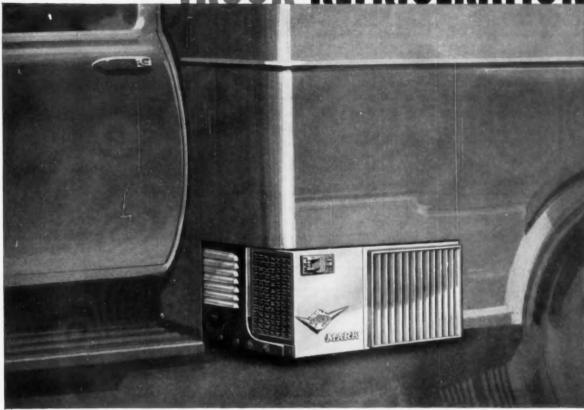
Prior Products announces two more outstanding new additions to the many safety and economy features they have introduced in Safety Fuel Tanks. 1 To increase the safety and strength of the "L-Step" Tank Prior Engineers designed special dies to emboss an impact-relieving structural rib as an integral part of the fully flanged tank heads. 2 Now all Prior "L-Step" Tanks are equipped with a SUMP in the bottom of the tank permitting full utilization of the entire fuel capacity of the tank. 3 The threat of entry of foreign particles into the fuel line has already been eliminated by the adoption of Monel Filter Tips on all Prior Safety Tanks.

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# Lookat the NEW TIME

## FOR CARBURETOR OVERHAUL!

• The following figures, courtesy of Carter Carburetor Corporation, show time study figures for carburetor overhaul using automatic screwdrivers and latest service procedures. Operations . . . disassemble, clean (includes brushing time only—not full soaking time), inspection (routine type). Install recarburetion kit, assemble, adjustments.

MODEL	ТҮРЕ	PREVIOUS TIME (ALSO CAR MFR. APPROX. FLAT RATE TIME)	NEW TIME
BBS-2063SA	Single Auto/Choke	1 hr. 15 min.	45 min.
BB-D6H2	Single Separate/Choke	1 hr.	30 min.
BB-E7J4	Single Kickdown and slow closer	1 hr. 15 min.	45 min.
BB-E9A1	Single Kickdown slow closer auto/choke	1 hr. 30 min.	50 min.
AS-2580S	Single Auto/Choke	1 hr. 15 min.	50 min.
YF-938S	Single Hand/Choke	1 hr.	30 min.
WGD-22315	Dual Auto/Choke	2 hrs.	50 min.
BBD-2637S	Dual 11/2" Separate/Choke	2 hrs.	45 min.
WCFB-2593S	4 B	21/2 hrs.	1 hr. 15 mis





# **Electric Screwdriver!**

The SIOUX Angle Screwdriver pays for itself in a hurry in carburetor and fuel pump overhaul. It quickly drives or removes screws of all types. Similar savings are realized in body work, in seatcover, convertible-top, trim shops, in fact anywhere screws are used.

H

The No. 243 Set shown includes the All-Angle Screwdriver, slotted screw bits, hex sockets, Phillips bits, ¼" drill chuck and adaptor, high speed drills, and metal carrying case.

The exclusive SIOUX All-Angle design permits work in spots you just can't get into with conventional tools.



### **ALBERTSON & CO., INC.**

SIOUX CITY, IOWA, U. S. A.

NEW AIR IMPACT WRENCHES « NEW AIR SCREWDRIVERS » NEW "PELICAN" NUT ACCUMULATORS « ELECTRIC IMPACT WRENCHES « DRILLS » GRINDERS » SANDERS » POLISHERS » VALVE FACE GRINDING MACHINES » SCREWDRIVERS » PORTABLE SAWS » FLEXIBLE SHAFTS » ABRASIVE DISCS

# **ALUMINUM** CENTIPEDE TRAILER **MULTIPLIES EXTRA PROFIT**



This 20-wheeled aluminum dump trailer, owned by the N. H. Albers Trucking Company, of Detroit, tips the scales at 1,600 pounds less than similar units built of heavier metals. Mr. W. Havel, General Manager of Albers Trucking, reports the extra payload hauled by this new aluminum unit adds up to a

bonus earning of \$8 every working day.

The extra payload capacity is but one of its advantages. After 60,000 miles of constant, grueling service, this durable aluminum dump trailer required less than one hour of maintenance, other than routine greasing and tire repair. The aluminum tail gate, unlike those on similarly constructed units of heavier metal, remained "unbowed" and good as new. Mr. Havel declares that new units to be added to the Albers fleet will all be aluminum.

The fabrication of this Alcoa® Aluminum unit marks HERCULES STEEL PRODUCTS COMPANY'S initial effort in the manufacture of full aluminum trailers. Truck and trailer dump bodies built of Alcoa Aluminum alloys can multiply your earnings, too. Send for the case histories of other truckers who are operating aluminum equipment and your FREE copy of Alcoa literature. Write to Aluminum Company of America, 1876-G Alcoa Building, Pittsburgh 19, Pennsylvania.

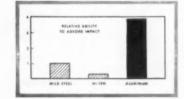


Your Guide to the Best in Aluminum Value





Dump bodies built of Alcoa Aluminum alloy have three times the impact resistance of steel-at half the weight.





# Laugh it off

Freight Checker (on phone): "Say, Babe, may I come over this evening?" Girl on other end: "What for?"

Freight Checker: "Sorry - wrong number."

CCI

Maintenance Steno: "Gee, honey, I know it must be terribly, terribly dull working here for this motor freight outfit, after spending several years in Hollywood.

Ex Movietown Gal: "No, it isn't really. I quite enjoy it."

Maintenance Steno: "I understand you got an Oscar, or somethin', while you were out there, working as an assistant to a producer."

Ex Movietown Charmer: "Yes, I did. He's three years old now and has the cutest blue eyes and dimples."

CCI

WEAVIN WILLIE, OUR TRUCK TER-MINAL'S GIFT TO THE LADIES, SAYS: "THE ONLY TIME A WOMAN WON'T LOOK INTO A MIRROR IS WHEN SHE'S PULLING OUT OF A PARKIN' PLACE."

1st Tipsy Truck Mechanic: "Lesh go home now, Joe."

2nd Ditto: "Now shee here, I'm afraid to go home, wife'll shmell ma breath."

1st Tipsy Truck Mechanic: "Can't you hold it?"

2nd Ditto: "Naw. Sh' too strong."

CCI

Diesel Mechanic: "I knew them danged scientists would fool around until they did something they hadn't oughter. Just look what they went and did."

Carburetor Specialist: "What did they do?"

Diesel Mechanic: "They've fooled around and invented something besides likker to cure a cold." TRUCK TERMINAL MANAGER: "WOULD YOU LIKE TO HUNT BEAR WITH ME?"

CUTE SECRETARY: "WHAT KIND OF A GIRL DO YOU TAKE ME FOR? I WOULDN'T EVEN GO HUNTING WITH YOU, MUCH LESS GO BARE."

cer

Slim 'N Greasy says: While half the population is going around trying to stamp out heart disease, the other half is going around saying, "Drop Dead."

ecs

TRUCK DRIVER'S WIFE: "THIS PLACE IS SIMPLY GRAND, SIMPLY WONDER-FUL. IT LEAVES ME SPEECHLESS."

TRUCK DRIVER: "LET'S LEASE IT FOR LIFE."

- Cici Jay"



"Hi! How are you doing while I'm on vacation?"

Tipsy Truck Mechanic: "Shay lishen, lady, you're ugly as home made soap. You're the homeliest woman I ever saw."

Beer Parlor Waitress: "Now, look who's talkin', will ya. Mac, you can bet you're the drunkest man I ever saw"

Tipsy Truck Mechanic: "I know, gal, but my condishun is transhunt. I'll get over it in the mornin'."

cc

1st Diner Waitress: "Why is Lacy so angry with poor old Hank. I always thought he was a perfect husband. In their ten years of married life, hasn't he always turned his check over to her the first of every month?"

2nd Diner Waitress: "Quite true, gal. He does just that. But Lucy just discovered that he gets paid on the fifteenth, too."

c c

SHOP ROUSTABOUT: "GEEZ, MABEL, WHEN I SQUEEZE YOU UP IN MY ARMS LIKE DIS, HONEY, SOMETHING SEEMS TO SNAP."

MISCHIEVOUS MABEL: "YEAH, LOVER BOY, TURN YER HEAD A MINUTE WHILE I FIX IT."

CCI

1st Truck Driver: "I thought you were getting mighty fresh with that Diner Waitress back at the truck stop."

2nd Truck Driver: "Yeah, you're right. I did get fresh with her, and she certainly told me a thing or two."

1st Truck Driver: "What did she tell you?"

2nd Truck Driver: "Her telephone number."

Resume Work

300%

more resistance to overcharge\*
greater resistance to undercharge\*
the two worst
battery killers

GOULD

and brawny GOULD batteries have these features for long over-the-road hauls or stop-and-start city service.

- thicker stronger plates—for extra miles of service
- new hard-rubber containers—space for bigger plates, extra electrolyte

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- new cell supports—extra protection against vibration, bumps
- new element protectors—reduce damage from careless servicing
- double insulation—stop plate oxide shedding
- famed Gould Deepwell—battery goes months without service

FALED HARGE TRUCK · BUS · DIESEL BATTERIES



Get the complete silver cobalt story from your Gould dealer — or write

### GOULD-NATIONAL

BATTERIES, INC. SAINT PAUL 1, MINNESOTA

\*Overcharging and undercharging together account for 80% of all battery failures! New Gould silver cobalt batteries have triple resistance to overcharge, greater resistance to undercharge—compared to SAE minimums.

GET GOULD BATTERIES FOR YOUR FORKLIFT TRUCKS

### ... HERE'S WHY .....

Corrosion eats away battery grid material just like rust eats away bare steel. Coated steel lasts indefinitely because it doesn't rust. Similarly, silver cobalt coats the battery grids, protecting them from corrosion. The grids last longer—the battery performs better—stays stronger longer,



Bare unprotected steel rusts



Coated steel



Unprotected battery grids corrode



Silver cobalt grids resist corrosion

If it moves ...

# ROCKWELL-STANDARD

**BRAKES CAN STOP IT!** 

Better control for the "heavyweights"

# HEAVY-DUTY "P" SERIES POWER BRAKES



Dependable control is indispensable on all large construction vehicles. Manufacturers must provide brakes that are rugged, safe and durable.

To meet this need, Rockwell-Standard makes the Heavy-Duty "P" Series Brakes to offer manufacturers greater dependability... better control...and longer service.

The Heavy-Duty "P" Series Brake utilizes a unit-mounted design offering a compact, self-contained assembly. Camshaft and air chamber support brackets are mounted directly onto the brake spider. (Inboard chamber mounting design is also available.)

Temperatures during operation are lower and liner life is longer because of the opentype spiders which assure good interval ventilation and rapid cooling. Rockwell-Standard 3/" "Econo-liners" are tapered to provide greatest thickness where most wear occurs ...less waste material at reline.

Other features include: heat-treated, malleable iron brake shoes . . . securely riveted brake linings . . . constant lift S-type, heat-treated cam . . . sealed, needle bearing camshaft mountings . . . long-life bronze bushings in anchor-pin holes . . . hardened, rust-proofed anchor pins.

Heavy-Duty "P" Series Brakes are available in a complete range of capacities and sizes to fit every Heavy-Duty operating requirement.

@1958, R-S Corp.

Another Product of...

For every industrial, agricultural or automotive

application where braking is required!

ROCKWELL-STANDARD

CORPORATION

BRAKE DIVISION Ashtabula, Ohio





# "No maintenance with our Hendrickson Tandems," says Steffke

The Steffke Freight Co., of Wausau, Wisconsin has 13 FWD's equipped with Hendrickson RS Series tandem suspensions, operating in their Midwestern territory.

M. J. Boyle, Jr., President of Steffke, says, "It is our opinion that Hendrickson tandems can't be beat. We've had no maintenance cost in an average of 170,000 miles each and find that they have saved us considerable money in tire wear and tire replacement costs.

"We feel that we should get 300,000 to 400,000 miles on these suspensions before any maintenance is needed. Naturally we are well satisfied with the Hendrickson Suspensions and will definitely specify them on any new Tandem equipment we purchase."

Aluminum saddles and equalizing beams on these units result in a 50% weight savings. The Hendrickson equalizing beam design reduces road irregularity and distributes the load equally between the axles. Complete rubber bushing of all oscillating points and four-point rubber "load cushions" eliminate all need for lubrication... also result in a smoother, easier ride during the entire load range, from empty to full.

Hendrickson Tandems stabilize the load, eliminate brake and starting chatter, assure perfect axle alignment, and end tire scuffing. For hauling heavier payloads faster, cheaper—under all road and load conditions—equip your trucks, tractors and trailers with either steel spring, rubber load cushion, or air ride Hendrickson Suspensions.

Call Hendrickson now, for complete information on your applica-



HENDRICKSON MFG. COMPANY 8001 WEST 47th STREET LYONS (Chicago Suburb), ILLINOIS













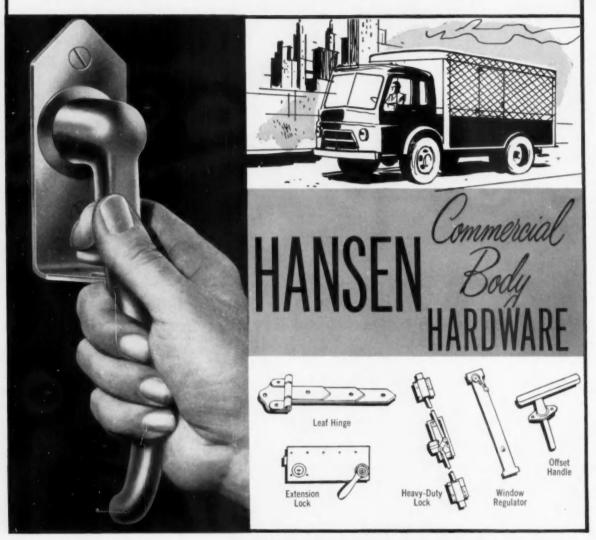








### Dependable Body Performance Starts Here!





### **SEND FOR**

complete literature on Hansen Commercial Body Hardware. Do it today! A quick grasp of a Hansen Door Handle . . . and you know immediately that here is modern design and outstanding quality in commercial body hardware! It's like that with all the products in the complete Hansen line . . . the reason why so many leading body builders insists on HANSEN . . . the Hardware for Hard Wear.



# A. L. FARSEN MFG. CO. 5037 Ravenswood Avenue, Chicago 40, Illinois



### "SOLEX® Glass keeps that burning Texas sun out of my cab,"

says J. B. Sullivan, driver for Galveston Truck Lines

"These Texas summers can be brutal," continues Mr. Sullivan, "but Solex helps keep down the heat inside the cab of my new Diesel job, and prevents me from getting tense and nervous. So, no matter what the load, I'm not nearly as tired after a day's run in this Solex-equipped truck as in my previous trucks."

Mr. Sullivan speaks with authority. He has been a driver for Galveston Truck Lines, Houston, Texas, for 17 years, carrying almost every transportable commodity. The award pin on his cap represents an achievement of 880,000 accident-free miles of piloting highway giants.

Mr. Sullivan is also grateful to Solex for helping to reduce sun glare in his cab. "Before Solex," says he, "it was a constant bother and danger on the road, having to change from regular glasses to sunglasses every time the sun got in my eyes. Now, with Solex, there's no more fatigue from eyestrain."

Solex Glass makes driving easier, safer and more comfortable. Install Solex in *your* new equipment and as a replacement in your present trucks. It is available in Pittsburgh Duplate® and Duolite® Safety Glass, as well as in Herculite® and conventional plate glass. For the full story on Solex, write to Pittsburgh Plate Glass Company, Room 8262, 632 Fort Duquesne Blvd., Pittsburgh 22, Pennsylvania.





SYMBOL OF SERVICE FOR SEVENTY-FIVE YEARS

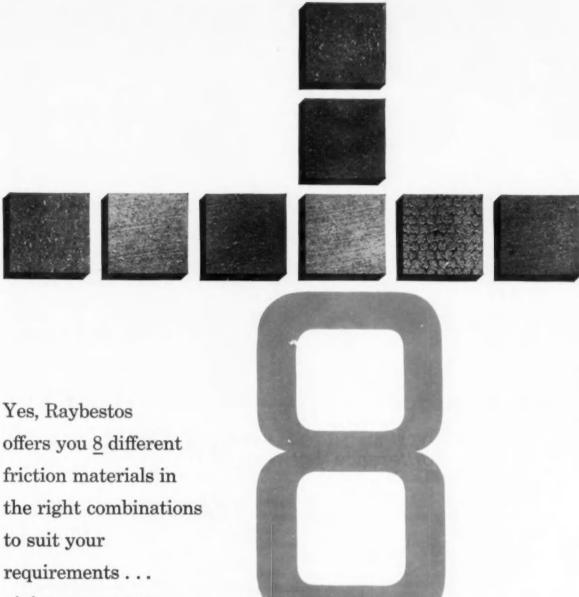
PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

### **1958 New Truck Registrations**

Arizona April 4 Mos. April 1 A Mos. April 1 A Mos. April 1 A Mos. California April 3 A Mos. California April 3 A Mos. Colorado April 1 A Mos. 70 April 4 Mos. 70 April 1 A Mos. 70 April 2 A Mos. 70 April 3 A Mos. 70 April 3 A Mos. 70 April 3 A Mos. 70 April 4 A Mos. 70 April 4 A Mos. 70 April 5 A		Brock- way	v- mond	Divco	Dodge	Ford	FWD	GMC	Inter- na- tional	Ken- worth	Mack		Stude- baker	White	Willys Jeep	Willys Truck	Misc. Dom.	For- eign	Total
Arkansas April 4 Mes. Arkansas April 3 April 3 April 4 Mes. Arkansas April 3 April 5 April 5 April 5 April 6 April 7 April 8 April 7 April 8 April 9 A			98 4		40	262	. ()	136	112		32		1	17	2	3		47	1.054
Arkansas April 4 Mos. California April 4 Mos. California April 1 Mos. Colorado April 1 Mos. Connecticut April 3 Mos. Connecticut April 3 Mos. Connecticut April 4 Mos. Connecticut April 1 Mos. Connecticut 1 Mo	45	1	45	8	171	1029 173	1	420 61	433 61	1	118		7 5	37	20 10	27 13	11112	119	3,899
Ames			18 5		162	734 283	1	226 89	203 125	7	10		15	12	20	47 10	8	80	2,448
20			69 6 54 19	8	195 279	1193 1682	5	403 359	467 342		25 10	15	25 24	17 51	15 60	26 67	8	13 442	4.054 5.133
Amos.   Amos	99		199 49	33	1251	6658	9	1260	1581	44	61	65	119	195	165	237	15	1719	20.570
Pelaware	97		97 3	8	57 268	1025	3	318	108 447	11	31	11	23	35	93	86 182	21 23	36	3,712
Sebest	52		12 4 152 11	1 6	135	87 362	1	36 135	71 204		39		8	14 53	35	14 71	1	30 103	1.625
Florida			71 2	1	13 43	59 177		16	34 117		41		1	10 37	2 7	1 6		14	222 707
Florida		100	81 2 22 3	3 8	10 31	142 290		14 60	18 44		11			1		12	1	31	285 714
Georgia	79		79 14	11 79	59 279	515 2118	3 20	114 493	131 669	. 1	17		51	56 232	24 88	63 200	2	129 435	7,028
Idaho	85	12000	185	5	56	451	20	128	119	ann.	35		11	20	7	5		17	1.239
Illinois	16		216 1	7	212 39	1543	1111	344 53	458 102	5 4	77	11111	21	71	19	27		120	619
Mariana   April   Ap			146 2 170 21	1	111	376 714	5	170 176	322 463	31	42	1	25 11	18	10	75	5	23 87	2,612
A Mos.   1   2   4   4   4   4   4   4   4   4   4	26 1	Jane.	326 131 68 14	33 10	637 132	3018 608	25	734 138	1947 345		177 61	1	65 39	184	47	159	31	255 36	2,269
Kansas   4 Mos.   1 Anril   2 Anril   3 Anril   3 Anril   3 Anril   3 Anril   3 Anril   4 Mos.   5 Anril   4 Mos.   2 Anril   4 Mos.   1 Anril   4 Mos.   1 Anril   4 Mos.   1 Anril   4 Mos.   2 Anril   4 Mos.   2 Anril   4 Mos.   5 Anril   5 Anri	22	1	122 43 138 24	27	344 66	1764 389	2	455 78	1042		168	1	114	181	18	76 10	19	78 16	6,455
Kentucky April 1 April 2 April 2 April 2 April 3 April 5 April 6 April 7 April 8 April 8 April 9 April 1 April 2 April 4 April	52	-	552 61	5	248	1357	2	256	871	4	25		29	37	7	24	1	63	4.652
A Mos.   A Mos.   Anril   An	44		722 3 344 12	3	167	1257		114 271	236 573	7	16		30	31	12	99	1	12 36	4.059
Augustaina   Aug	14		365 314 8	1 3	46 194	1009	1	81 317	113 457		12 38		18	5 38	7 25	8		11 48	3,511
Maine	38		338 6 192 10		59 226	483 1778		123 401	138 602	4	22 52		21	13	12 30	6 33		23 117	1.559
Maryland	37	1	137	14	16 59	93 359		28 115	64		8		6	6	6 33	13	1	18 56	1.375
Massachusetts   April   5   3   4   Mos.   22   1   1   1   1   1   1   1   1	142	3	342 3	3	75	218		54	232 96		23 27		3	22	3	12		20	879
Michigan   April   April   Amos   2   Amos   April   Amos   2   Amos   April   Amos   April   Amos   April   Amos   April   Amos   April   Amos   Amo	111	5	311 4	15	204 88	670 353		186	312 161		61 25	1	11 8	64 31	15 14	42 51	3	59 76	2.562 1.218
Minnesota		22	797 6	16	227 137	897 598	5	245	416 114		77 35	1	12	91 26	48 12	137 26	17	157 48	3,166
Mississippi			037 23 540 6	39	520 74	2059 626	9	451 90	512 199		106		28 17	120 20	39	106 16	18	206 42	1.656
Missouri Amri Amri Amri Amri Amri Amri Amri Am	557		557 15	18	250	1556	5	276	688	1	23		56	33	11	49	6	110	4.654
Montana	180		320 380 1		14 68	242 871		73 212	83 346		10		11	3	11 22	2 9	1	26	2.960
Nebraska			700 4		72 239	497 1765		141 551	237 935	1	49		9 36	78 127	10 25	20 42	1 2	69	6,244
Nebraska			165 1 525 1		30 131	117 486	2	45 161	103 401	2 5	5 13	1	6 20	13	10 29	39 110		14 29	1.927
New Jersey	340		340 17 166 39	2	30 153	206 821		55 212	135 539	11	6	1	3 22	15 46	9 35	13 63	3	7 22	3.154
New Jersey	82		82		8	99		15	28			- 1	4	40	33	8	1	44	290
New Jersey   April   8   4   Mos.   4   Mos.   4   Mos.   5   Mov.   6   Mov.	173		175	8	27 28	210 142	1	45 45	61 75		10		17	5	16	17 39	1	64 72	63
New Mexico   April   4 Mos.   1 Mos.			273 2 430 15	10	59 106	212 448		57 157	128 165	1	28		22	105	33 19	73 46		98	1.01
New York		47	684 51 288	119	418 31	1371 172	7	504 71	646 54	1	180		16	273	60	170		299	5.84
North Carelina	072	61	072 3 781 14	16	138 203	598 715	11	298 214	214 479	2	19		14 18	11 75	26 44	49 93	11	22 195	2.46
North Daketa	797		797 49	90	826	2484	22	816	2002	1	340		60	287	196	475	57	750	11.36
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Ohie April 2 4 Mos. 3 0klahoma 4 Mos. 3 0klahoma April 4 4 Mos. 1 0regen April 4 4 Mos. 1 Pennsylvania April 11 4 Mos. 1 Rhode Island April 4 4 Mos. 3 South Carolina April 1 South Dakota April 1 Texas April 4 4 Mos. 4 1 Texas April 2 1 Texas April 3 1 Texas April 4 1 Texas April 2 1 Texas April 4 1 Texas April 2 1 Texas April 4 1 Texas April 2 1 Texas April 4 1 Texas April 4 1 Texas April 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		100-11	138 4 416 5	1	29 97	135 414		39 107	104 408		3		18	1	1 3	10	1	18	1.50
Oktahoma   April	800	2	800 20 987 53	21 60	126 577	652 2494	1 5	360 813	341 1260		80 200		20 67	67 320			2 7	86 267	2.63 9.32
Oregen	566	1	566 3	1	57	393 1351		79	131		6		11	14	4	7	2	18	1.29
Ponnsylvania	417	in a const	417 3	3	186	339		314 89	479 398	11	35 45	1	20 17	46 16	8	34	1	110	1.56
Rhode Island	780	11	320 3 780 10	16	214 209	856 604	2	256 194	696 446	20	58 117	12	31 35	47 60	41	93		337 103	4.03
South Carolina	613 43	44	613 46 43 3	55	850 10	2322 53		640 26	1563 23		394		94	268	149	362	10	363 13	9.77
South Dakota	142	3		4	36 26	156 164		64 37	85 34	1	23 25		2	25 13		12		52 16	61
Tennessee	930	. 1	930	1	95 31	557		149	205		59		9	30	9	16		48	2.10
Texas	142 469		469 5		93	128 488	3	36 136	116 462		4	******	22	4		44	3	19	1.77
Toxas April 4 Mos. 4 Mos. 2 Mos. 4 Mos. 5 Mos. 5 Mos. 5 Mos. 5 Mos. 6 Mo	704		426 3 1704 8	2	54 250	358 1275		109 393	97 496	1	109		18	10	22	37		25 58	1.12
Ulah. April 4 Mos. 2 Vermont. 4 Mos. 2 Virginia April 4 Mos. 2 Virginia April 4 Mos. 1 April 4 Mos. 1 April 4 Mos.	557	make.	2557 10 1962 39	5	244	1656 5898	2	342 1245	595 2075	2	47	1	35 121	94 488	30	36 127	1	59 186	8.71
Verment. April 2 4 Mos. 2 Virginia April 4 Mos. 1 Washington. April 4 Mos. 4 Most Virginia April 4 Mos. 4 Most Virginia April 4 Mos. 4 Mosconsin April 4 Mos	98			1	49 147	89 340		43 160	68 206	1	2	11	3	8 21	10	19		5 36	1.3
Virginia April 4 Mos. 4 Mos. Washington April 4 Mos. 4 Mos. West Virginia April 4 Mos. Wisconsin April 4 Mos. 4 Mos.	98	2	98	3	17	118		44	83	20	. 8		2	5	14	32		18	4
Washington April West Virginia April 4 Mos.  West Virginia April 4 Mos.  Wisconsin April 4 Mos.	197 467	10000	467 3	3	83	189 356		104	143	Direc	53		4 7	19	9	44		36	1.3
West Virginia April 4 Mos. 4 M	361 286	k	286	8	53	1094 302		283 102	486 156		136	3	24	94	26	108	1	101 75	3.9
Wisconsin			1048 11	17	230 26	984	12	322 43	465 45	50		9	35 5	14	1 21	82	2	219	3.5
4 Mos.	586	h	586 5	13	126	453	1	159	188		. 29		17	20	0 56	93	3	42	1.7
			1505 20	15	248	348 1151	18	114 320	318 842	1			26	38	9 33	2 81	1 7		1,4
Wyaming April 4 Mos.	372			*****	12	286		108	38 181	1		1	14		1 2			11	1.1
	-	-	1803 250	227	3308	17815	-	4890	8095	-	-	-	439	-	-	-	-	-	63.4
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		8 257	5715 930 2980 1184	750 1011		61819 82748		16429 21763	28853 29460							4 425 7 520	1 270 9 271		220.3 260.2

Source: R. L. Polk & Co.



the right combinations
to suit your
requirements . . .
giving you greater
safety, longer block
wear, and better drum
life at a lower cost per
mile . . . no matter what
your equipment or where
you operate.





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Industrial Adhesives • Bowling Bells



### REEFER DEPENDABILITY...

### the difference between PROFIT and LOSS

During the hot months, the "X" factor between profit and loss is reefer dependability. Ambient air temperatures go sky-high. "Soft spots" in insulation may keep trailer interior temperatures above requirements. Does your refrigeration equipment offer adequate power and capacity to overcome those problems?

When you're considering new reefer units, talk over your problems with your Tropic-Aire representative. He'll show you how Tropic-Aire refrigeration equipment can turn defrost losses into delivered profits.



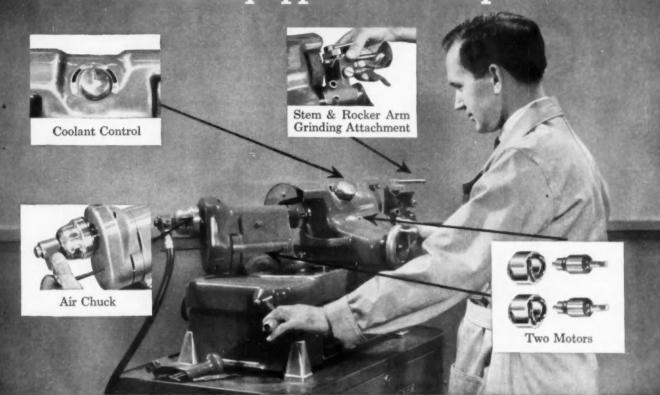


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McGRAW-EDISON CO. TROPIC-AIRE DIVISION 5201 W. 65th St. Chicage 38, Illinois

### Have the best equipped valve shop in town!



### Put a B&D Valve Refacer in your shop for as little as \$1369 a month!

Start making faster valve job profits with the best equipped shop in town! You'll turn out top workpocket extra profits in less time with a Black & Decker No. 626 Valve Refacer.

Here's why! Only Black & Decker brings you the super-speed air chuck: grips and releases valve stems instantly for maximum speed - assures accurate alignment every time. Exclusive Auto-Flow Coolant Control puts exactly the right amount of coolant on the work for best operation. Two motors give you smoothest power — constant speed for top finish.

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### Exclusive Black & Decker Air Chuck with fast

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- Universal wheel dresser swivels aside while grinding.
- Micrometer Valve Stem and Rocker Arm Grinding Attachment saves time — gives top accuracy! Plus many other time-saving features!

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Quality Electric Tools—Power-built for top performance MAIL TODAY FOR FREE DEMONSTRATION

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- ☐ Please arrange a free demonstration of your No. 626 Valve
- ☐ Please send me additional literature.

......Title.....

City......Zone.....State....







Moral: Take it easy, you'll last longer

AND POST ON YOUR

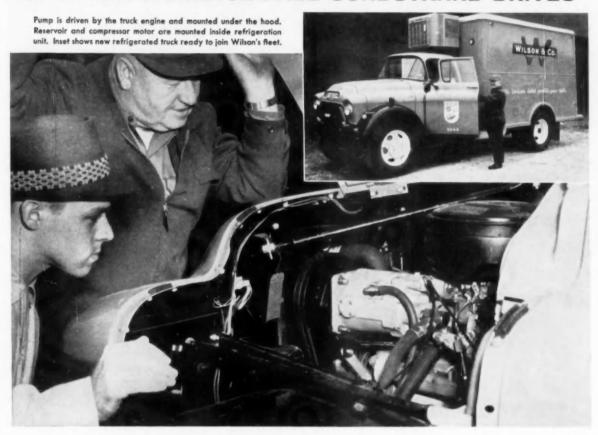
BULLETIN

AT NOMINAL

### Wilson & Co.

### improves truck refrigeration

### WITH MAINTENANCE-FREE SUNDSTRAND DRIVES



There's a new day in truck refrigeration efficiency for Wilson & Co. throughout its nationwide branches. Since the packing firm began using Sundstrand constant speed truck refrigeration drives a few years ago, reports of operating, service, and maintenance costs reaching the company's Chicago headquarters are far below what used to be considered normal. Prolonged operation without interruption has become commonplace. Refrigeration standards are the highest they've ever been, too!

Here are a few comments from Wilson branch managers . . . "Practically trouble-free in two years' operation

day . . . 8 trucks running like tops, no problem." It's no accident that Sundstrand constant speed refrigeration drives are setting such outstanding performance records—they were designed for the job. There's nothing complicated about using one to drive your refrigeration unit, either. Just a pump under the hood, plus oil reservoir and motor to drive the compressor in the refrigeration unit itself—that's all it takes.

Learn more about capacities, performance, and other details by writing today for Bulletin 5002-4.



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"I gave him the best heavy-duty, long-mileage engine bearings on the market—Federal-Mogul sintered copper-alloy bearings. They've proved they have what it takes to stand up under the load, speed and temperature conditions of heavy-duty operation."

Fm sintered bearings have a low-carbon steel back

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"Re-installing a used or worn oil seal can cause a breakdown, brake or bearing failure, even an accident.

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# Take your pick for pickup and delivery!



Fully enclosed METRO® Walk-in all-steel cab with International chassis is designed for low cost local mounting with presently owned body. Choice of wheelbases range from 115 to 179¾ in. Gross vehicle weights: 8,000 to 16,000 lbs.



Lighter weight for faster delivery of bigger loads. METRO-LITE® body capacities range from 352 to 468 cu. ft. Body lengths: 9 ft. 8 in. to 12 ft. 8 in. Wheelbases: 115 to 134 in. Gross vehicle weights: 5.400 to 11.000 lbs.



Low-cost front-end section matches multi-stop economy of operation and maintenance to any highly specialized body application. Metro® Front-End Section wheelbases range from 102 to 1793/4 in. Gross vehicle weights from 5,400 to 16,000 lbs.

# INTERNATIONAL TRUCKS



Walk-in, walk-through integral cab and body for ease of load handling. Big-volume Metro Van® body capacities range from 375 to 724 cu. ft. Body lengths: 9 ft. 6 in. to 16 ft. 7 in. Wheelbases: 115 to 179¾ in. Gross vehicle weights: 5,400 to 16,000 lbs.

Choose from the world's most complete family of multi-stop delivery units...

INTERNATIONAL Trucks with METRO® Bodies



Maximum utility of uniform load area. Metro body (flatback style) capacities range from 306 to 417 cu. ft. Body lengths: 9 ft. 6 in. to 12 ft. 7 in. Wheelbases: 115 to 137¾ in. Gross vehicle weights: 5.400 to 16,000 lbs.

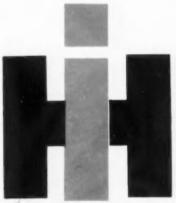


All-steel bodies anti-rust protected at all critical areas, Standard METRO body capacities range from 243 to 301 cu. ft. Body lengths: 7 ft. 9 in. to 9 ft. 6 in. Wheelbases; 102 to 115 in. Gross vehicle weights from 5,400 to 11,000 lbs.



Sit-or-stand-drive comfort and factory-installed interior arrangements to meet need. METROETTE® body capacities range from 208 to 283 cu. ft. Body lengths: 7 ft. to 9 ft. 6 in. Wheelbases: 115 to 134 in. Gross vehicle weights: 5,400 to 11,000 lbs.

### See your INTERNATIONAL Dealer!



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# cost least to own!

# HOW TO GET YOUR SHARE OF SEAWAY TONNAGE

There's still time to assess its impact on your business, but with partial opening of the Fourth Seacoast only a year away there are many questions to answer THE NATION'S FOURTH SEACOAST moved a step closer to reality this month. On July 1 the St. Lawrence Seaway was officially opened for 14-foot vessels. Next April, full-size ocean going vessels with 27-ft drafts will be able to use the Great Lakes system as far as Lake Erie. With the completion of inter-lake channel deepening by the Army's Corps of Engineers in 1962, ports along the Great Lakes will move into full competition in the international trade field.

Main ports on the Great Lakes and their relation to the Interstate Highway System are shown in the accompanying map. There's a progress report on the highway building program on page 82. Since the Seaway and the highway program will have a major impact on the nation's transportation picture, and on your business, they're worth considering together.

#### You'll feel the effect

of the Seaway when it opens. Some fleets, particularly in construction and allied fields, have already received direct business during construction of the \$500-million navigation system and the \$600-million allied electric power development. Highlights of these projects are in the box on page 69. Construction of new port facilities, industrial plants and ships, worth an estimated \$100 million, as a result of the Seaway's potential, have also meant business for many for-hire and private fleets.

But most of these facts are past history. What about the future? What will the Seaway mean to you? Will there be an overnight bonanza of new business? What plans should you make now, as a private or forhire fleet operator, to get your full share of Seaway-produced business?

#### There will be new business.

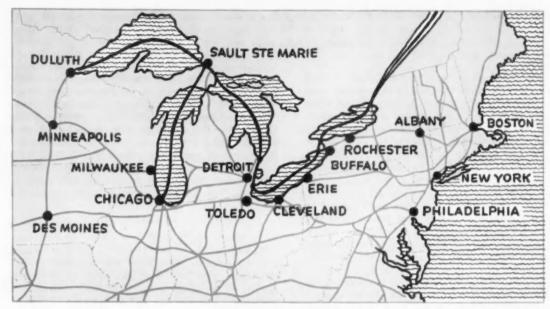
that's for sure. But factual answers to the previous questions are hard to find. In general, fleets in the Great Lakes regions expect the Seaway to produce new business, directly or indirectly. They can see potential shifts in traffic patterns, new industrial expansion in port cities, population growth too. But, they say, the changes will be gradual. And there may be problems along the way.

Original, over-optimistic predictions of the system's









St. Lawrence Seaway will affect more than the immediate Great Lakes region. Map above shows major ports and Interstate System

potential export-import traffic have been revised. Traffic on the St. Lawrence, including domestic and foreign shipments, now runs about 15 million tons a year. For 1959, first year of the Seaway, it's expected to reach between 30 and 35 million tons. Peak volume, about 50 million tons, is not now expected before 1968.

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Only part of this tonnage, of course, will be handled by trucks. About 75 per cent of the Seaway's traffic will be bulk cargo such as iron ore, grain and petroleum. Of this, trucks move a small but growing share. They'll handle a bigger share of the general cargo, which should total about five million tons in 1959 and may reach 10 million tons by 1970.

#### Trucks' share of the traffic

in individual ports will vary considerably. Some ports will concentrate on bulk cargo. Chicago, however, in a bid for port supremacy, expects at least half its Seaway traffic and some 60 per cent of its general

cargo to be distributed by trucks. There's a summary of the picture at individual ports starting on page 68.

### There's still time

to study the Seaway's potential impact, and include it in your planning for the future. But you can't afford to wait much longer to take action. Some fleets have already pegged expansion and equipment replacement programs to the Seaway's time-table. They plan to get the jump on their competition.

Even local predictions will have to be educated guesses until the Seaway opens. But next year fleets in the Lake Ontario and Lake Erie port areas should have facts on which to base future decisions. From their experience, other operators who will be affected later should be able to learn some valuable lessons.

In the meantime, it will pay to keep in touch with port officials and developments in your area. (A list of port officials will be found at the end of this article.)

(TURN TO NEXT PAGE, PLEASE)







### Your Share of Seaway Tonnage . . .

Continued from Page 67

Most Seaway port officials are truck conscious. They're designing port facilities with trucks in mind, as you'll see from the summary of port activity. Ports which plan to boost general cargo volume are particularly stressing the truck services their port offers. But they still need your support in promoting the port, and in attracting new industry to the port area. You can help assure your share of Seaway business by taking an active part in these activities.

You can't afford to

ignore the Seaway's impact on your future plans just because you're outside the immediate Great Lakes region. Traffic which will actually move on the lakes and the St. Lawrence is only part of the Seaway's total effect.

On the East Coast, for example, it looks like truck operators can expect gains rather than losses of business as a result of the Seaway. While it's true that some traffic will be diverted from such ports as Boston, New York, Philadelphia and Baltimore, the diversion will mainly affect bulk cargo. To replace this traffic, port authorities are busy with plans to develop more general cargo traffic. New York has a \$380 million port improvement program which includes better general cargo and truck facilities, Philadelphia is considering a new multi-million dollar general cargo terminal. Several years ago Baltimore overhauled

its port facilities for more efficient truck operation.
But it's in the states on the Seaway itself that the

But it's in the states on the Seaway itself that the main impact will be felt. According to George H. Weiss, chairman of the Great Lakes Overseas Freight Conference, the Seaway's area of influence should extend some 450 miles south and from 1000 to 1500 miles west of the Great Lakes. Its influence will be further extended through links with the Mississippi River system at Calumet Harbor, near Chicago, and with the New York State Barge Canal near Buffalo, N. Y.

Major port activity

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along the Seaway's route now shapes up like this:

Buffalo, N. Y. is the closest large U. S. Seaway port. The city's steel mills will use Seaway ships to import iron ore from Labrador, while chemical industries along the Niagara Frontier will also import large quantities of raw materials.

General cargo shipments are small now (less than 10,000 tons), could boom if port is exploited. One estimate of import-export traffic potential set the total at 1 million tons.

Port improvement needs in 1951 were estimated at \$26.9 million. Port authority has a harbor improvement project well under way, and is purchasing an existing general cargo terminal.

Local carriers are working in experimental traileron-ship service with a Duluth, Minn. operator.

Now the milling center of the nation, Buffalo may lose some of its grain traffic to mid-west ports when the Seaway system is completed.

Northern New York ports are conservative in their estimates of the Seaway's impact. Rochester has studied the potential, seems to be waiting for future developments. Oswego, N. Y., has a \$100,000 port-development program which includes plans for a trailer-ship terminal and general cargo facilities. The port is on the New York State Barge canal, is linked with the New York Thruway. One estimate of potential general cargo, considered conservative by port officials, is for 265,000 tons by 1960, rising to 515,000 tons by 1970.







Erie, Pa. has a state-financed port development program which includes a general cargo dock and waterfront improvements for new industry.

Cleveland, Ohio expects major benefits from the Seaway and is one of the few ports in which impact on truck operators has been estimated. A forecast developed by White Motor Co., calls for a potential 20 per cent increase in truck traffic in the Great Lakes region as a Seaway result. For Cleveland's 150 forhire motor carriers this means a jump from some 12 million tons last year to 15 million tons in 1961.

The port has new general cargo facilities, expects some 800,000 tons of general cargo to move when the Seaway opens. Port improvements and an active promotion program make truck service an important feature.

Bulk shipments of Labrador ore will be important to the city's steel mills. At least one steel manufacturer has a multi-million dollar expansion program in the area, and industrial development is booming in the entire Northeastern Ohio region. Between 1946 and 1956 manufacturers have spent more than \$2 billion on plants and equipment, and the area expects to eventually have from 5 to 6 per cent of the nation's industrial capacity.

The city has a \$5-million waterfront improvement program, and a \$50 million project to permit deep-draft vessels to reach the basic industries along the Cuyahoga River.

Several reports and studies on the port and its potential have been published. They're worth reading if you serve the area.

Toledo, Ohio is well established as a major port. Primarily handling bulk commodities at private docks now, it expects to boost its general cargo traffic. It's now the largest bituminous coal port in the world, ranks 12th in the nation in terms of tonnage.

Grain will be an important factor in the port's future. A new study predicts trucks will carry export grain from two-thirds of the state's wheat producing areas to the Port of Toledo. Chicago officials agree that Toledo may divert some of that port's grain traffic because of the Ohio port's early access to full status as a Seaway port.

New general cargo and tank farm facilities are planned for a 65-acre site at Presque Isle. Present general cargo facilities are privately owned. While port officials plan to concentrate on bulk traffic, estimates put potential annual general cargo volume at more than 200,000 tons,

Detroit, Mich. faces a problem of limited available space for municipal port activity. Private industry crowds the waterfront now, and citizens have voted down a proposal for public port facilities. Another vote will be held this year.

The port handled some 35 million tons of bulk cargo in 1956, but this was mainly domestic traffic. Overseas trade currently accounts for little more than 100,000 tons of the port's volume. However, it's expected to reach 300,000 tons by 1960 and 1 million tons by 1965.

Milwaukee, Wis. is already rated one of the finest ports on the Great Lakes, and will be well prepared for Seaway traffic. Port activity in recent years has included expenditure of \$5.4 million on Seaway-related projects and another \$4 million on other waterfront improvements. Among the improvements: a \$1.8 million viaduct to give trucks easy access to the dock area, a \$3.4 million general cargo terminal with truck facilities and modern materials handling equipment.

A big jump in overseas trade is expected when the Seaway opens. From 70,000 tons in 1955, the overseas traffic is expected to reach 500,000 tons when the Seaway opens.

Port Director Harry C. Brockel warned fleet executives at a meeting of American Trucking Assns.'
(TURN TO PAGE 134, PLEASE)

### A Mammoth Construction Job

Opening the Great Lakes ports for deepwater navigation is the biggest job of its kind ever undertaken on this continent. Some of the \$75 million of construction equipment and 15,000 men it required are shown in the accompanying photos.

The 182-miles of officially-designated Seaway projects involved moving 180 million tons of earth and rock. This total includes American and Canadian navigation and power projects. Work on U.S. projects included about 19 million cu yd of excavation. Locks and power projects used 1.5 million cu yd of concrete, about 23,000 tons of steel. Total estimated cost of U.S. Seaway work, not including local harbor improvements, is \$130 million.

The separate Connecting Channels project is another giant earth-moving job. It will require removal of 3.7 million cu yd of ledge rock and dredging of more than 40 million cu yd of sand, clay, gravel and boulders to provide 27 ft channels above Lake Erie. Estimated cost is an additional \$140 million.



### **Consolidated Sets Up Special Group to**

### New Equipment Development Department makes tests—passes

"FIND A BETTER WAY" might well be the motto of the Equipment Development Dept. of Consolidated Freightways, Portland, Ore. As Bert Ogden, vice president in charge of the department says, "We take the attitude that we're never doing anything well enough, that improvement is always possible."

Some of the subjects investigated by the department since its founding in 1956 include . . .

- Possible savings in diesel fuel use. (First page of the report on this project is reproduced below.)
  - Whether or not exhaust brakes would pay.
- How to get maximum tire wear with heavier axle loading.

Equipment Development Department issues a Progress Bulletin with recent test results. EDD recommends changes but regional managers make decision to adopt



RESEARCH AND DEVELOPMENT



ISSUED TO C. F. REGION, DIVISION AND SUBSIDIARY MANAGERS

Bulletin No.

November 1957

Subject: SAVINGS POSSIBLE BY INCREASING DIESEL FUEL MILEAGE.

The everage miles per gallon of the diesel powered equipment by vehicle and engine type is a result of combining all of the miles operated for that type of equipment and dividing ty the total fund consumed for the same equipment. However, this result, being an everage, does not point up that some of the equipment is operating considerably below the servage for all of the equipment of that type. Those units operating below the everage miles per gallon are conting thousands of dollars per accounting period in excessive fund. Consumption.

A research study covering accounting periods 6, 7 and 8 reveals the following.

#### Transcontinental Tractors:

- (1) 96 each line tractors with Cummins NR engines averaged 5.07 MPG. 36 units under the 5.07 NPG averaged only 4.70 MPG. These 46 units consumed 261,961 gallons to operate 1,246,927 alies and if they had been up to the Treet average would have consumed only 245,942 gallons. This additional 15,949 gallons consumed at 5.22 per gallon, including State and Federal taxes, amounts to \$3,502.36 for three accounting periods.
- (2) 159 each sleeper tractors with Cusmins RM engines averaged 5.40 NRO. 76 units under the 5.40 NRO averaged only 5.07 NRO. These 76 units consumed 405,195 gallons to operate 3.069,595 miles and if they had been up to the fixet average, would have consumed only 333,250 gallons. This additional 24,945 gallons consumed at \$.22 per gallon, including State and Federal taxes, essents to \$5,407,50 for three accounting periods.

#### Western Twinliner Tractors:

- (1) 95 each ax2 tractors with Cummins NT engines averaged 4,84 MPG. At units under the 4,86 MPG averaged only 4.62 MPG. These bi units consumed 221,009 gallons to operate 1,002,167 miles and if they had been up to the fleet average, would have consumed only 211,291 gallons. This additional 9,818 gallons consumed at 3,22 per gallon, including State and Federal taxes, amounts to 82,199,95 for three accounting periods.
- (2) 97 each ask tractors with Cussins 57 engines averaged 4.89 MFG. A2 units under the 4.89 MFG averaged only 5.29 MFG. These 52 units consumed 224,115 gallons to operate 961,858 aften and if they had been up to the finet average, would have consumed only 214,122 gallons. This additional 9,983 gallons consumed at 5.22 per gallon, including State and Pedeval taxes, security to 52,106.26 for three accounting periods.

In brief, here's how these questions were tackled by the Equipment Development Dept. . . .

### The fuel study was conducted over

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a three-month period. Tractors were grouped into seven basic types with results for each group as follows:

1. Ninety-six tractors with Cummins NH diesel engines averaged 5.07 mpg. Of these, 46 were below average. Had they been at least average, fuel savings would have totaled \$15,175 on an annual basis.

2. A second group of 159 sleeper tractors with the same engine as the first averaged 5.40 mpg. There were 76 units below average in this group with a possible annual saving of \$23,779.

3. Ninety-five 4 x 2 tractors with Cummins NT engines averaged 4.84 mpg. Possible annual saving had the 41 tractors under average been up to average totaled \$9,359.

4. Fourth group was composed of 97 4 x 4 tractors with same engines as the third group. Its average was 4.49 mpg with 42 units below. Annual saving possible here had they been up to average was \$9,516.

5. A group of 18 sleeper cab versions of the tractors in the fourth group averaged 4.29 mpg with 10 units under average. Annual savings are reported at a possible \$3,940.

6. A group of 17 4 x 4 tractors similar to those in the fourth group but with Cummins NH engines averaged 4.45 mpg. Possible annual savings had the 10 under average been up to average totaled \$2,236.

7. Sixteen 4 x 2 versions of the tractors in the sixth group averaged 4.86 mpg with seven below the average. Possible annual savings had the seven been at least average was \$2.462.

#### The Equipment Development

Dept. apparently felt that the fleet's shops could boost the average if they knew which tractors needed attention. The fuel study report concludes . . .

"There are at least three things needed in the form of tools or reports for the shops to accomplish these savings: (1) The present fuel and oil report on each vehicle which is prepared by the Accounting Dept. should be changed to include a three-period average on each vehicle so the shop managers can see at a

COMMERCIAL CAR JOURNAL, July, 1958

### "Find a Better Way"

### recommendations on to regional managers

glance when a vehicle is doing poorly fuel-wise as well as oil-wise. A period average is not too satisfactory since it can vary to a large extent, depending on reports available at the end of a period. Our recommendation would be one column showing a three-period average and one column showing the current period average. (2) A chassis dynamometer is necessary so poorly performing vehicles can be tested and set under full load conditions. (3) A fuel flow meter is necessary to measure the amount of fuel the engine burns per hour under full load conditions."

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Tests of exhaust brakes were held

to determine whether there was an operation problem with the exhaust brake itself and what effect the brake might have on the engine. It was found that during the year 1956, the brake relining and drum replacement costs for a group of 266 vehicles operating 26,845,000 miles without exhaust brakes was \$200,612.79.

The study further showed that if the group of 266 vehicles operating the same mileage during the year had been equipped with exhaust brakes, the cost of relining (\$98,918.82) and drum replacements \$34,-745.81) would have totaled \$133,664.63.

On this basis, after amortization

of costs of installing exhaust brakes, a saving of \$16,162.08 would have been possible in the first year of operation, while in the second year, after amortization of brake installation costs and including an estimated cost of exhaust brake maintenance, the saving would have been \$62,331.70.

"The results of these tests, since they led to adoption of the exhaust brake throughout the mountainous terrain of the Consolidated system, were most gratifying," said Ogden, "not only from the standpoint of saving thousands of dollars but perhaps a few lives, since the exhaust brake reduces the possibility of service brakes failing when the vehicle is descending a long grade.

"Drivers like the exhaust

brake. It gives them an added feeling of security. If exhaust brakes are used, service brakes are at all



times cool enough so that emergency stops can be made."

A tire wear problem arose when Consolidated switched from six-wheel equipment—A full truck and full three-axle trailer—to "Twinliner" operation with a short two-axle tractor, single-axle semi-trailer and a two-axle full trailer. The switch meant that instead of 22 tires (10 on the truck and 12 on the trailer) there would be only 18 (six on the tractor, four on the one-axle semi-trailer and eight on the full two-axle trailer).

With heavier loaded axles in the

Twinliner operation, wear on the tread was faster, especially on the tractor tires. With the older type of equipment the average on drive wheels in the fleet's western region was 55,000 miles per tread, with a 2.6 recap average. Studies of the Twinliner equipment disclosed that mileage in the western region was only 25,000 per tread for the drive wheels and only 1.1 average for recaps.

It was up to Ray Kupp, in charge of tire maintenance, to determine what tire would stand up best. Kupp watched the developments of tires by various tire manufacturers and learned all he could about the results of special tires that had been tried out elsewhere. Finally he decided to experiment with a new highway lug type tire.

Tests were conducted in the

eastern region with 50 tires of one make of this new type and in the western region with 50 tires of another brand of the highway lug type and 50 tires of all purpose lug type.

After a year of experimenting, Consolidated re-(TURN TO PAGE 112, PLEASE)

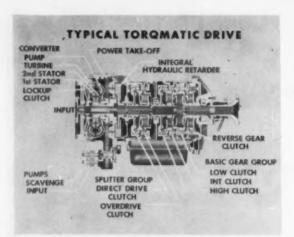


FIG. 1. Typical Torquatic drive has a torque converter and hydraulically actuated, full-torque-shifting transmission. Integral hydraulic retarder is often optional

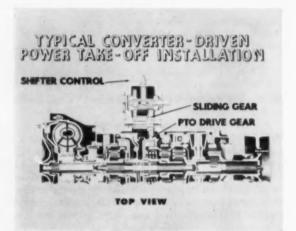


FIG. 2 Converter-driven PTO has same torque converter characteristics as transmission has for vehicle propulsion. In use, sliding gear engages with PTO drive gear

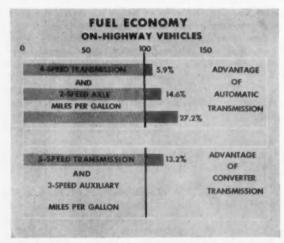


Fig. 3. In a road test, trucks with "Torqmatic" averaged 13.2 per cent better fuel mileage than units with 5-speed box and 3-speed auxiliary. On others, was 27.2 per cent

### Allison's

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Here's the low-down on the new fully automatic transmission offered on medium and heavy-duty trucks by three major manufacturers

FULL ACCEPTANCE of automatic transmissions on medium and heavy duty on-highway trucks is just around the corner. This is the word from R. M. Schaefer, Manager, Transmissions Engineering, Allison Division, General Motors Corp.

He led a discussion of automatics at a recent joint meeting of the motor vehicle committees of American Gas Assn. and Edison Electric Institute. It started with the utility fleetmen saying, "Show me." It wound up with an impressed group. Here's the story Schaefer told . . .

Automatic transmissions for medium and heavy duty trucks started as modified versions of passenger

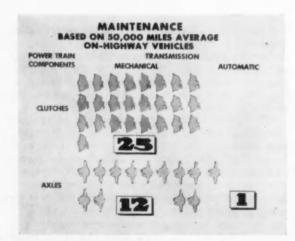


FIG. 4. Fleet test covering 50,000 miles per truck showed 25 clutches and one axle shaft failure compared to one axle replacement with the Allison "Torqmatic" unit

### "Torqmatic" Rates Well in On-Highway Service

car designs. But in January, 1956, Chevrolet introduced the "Powermatic"—the first fully automatic transmission designed exclusively for the trucking industry.

Allison-built, it had a heavy-duty heritage. It stemmed from more than 100,000 Allison Torqmatic drives, with millions of hours of operation in 50-ton tanks, off-highway trucks, and giant off-highway equipment.

### The same basic design is now

used in Ford's "Transmatic" unit and in the "Torqmatic" transmissions offered on Dodge and GMC medium and heavy trucks. There are, however, important variations in the transmission's converter design to match it to the engine and power train.

The Allison design uses four basic components . . .

1. Torque converter

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- 2. Planetary gear train
- 3. Hydraulic retarder
- 4. Hydraulic control system

Models have been designed to handle torque inputs of 200, 250, 300 and 400 ft-lb. All have six forward

MANUAL SHIFTS
MECHANICAL VS POWERMATIC

ALCAN HIGHWAY TRIP

1560 SHIFTS

1560 SHIFTS

1570 MILES
POWERMATIC

PENNSYLVANIA TRIP

1775 SHIFTS

POWERMATIC

1550 SHIFTS

1550 SHIFTS

POWERMATIC

1550 SHIFTS

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1775 SHIFTS

POWERMATIC

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1550 SHIFTS

FIG. 5. Shown above is the number of shifts required on three trips. "Torqmatic" lets driver concentrate on driving, less on truck operation. Route time cut 15 per cent

speeds, one reverse. They also feature full power shifting and an automatic lock-up that furnishes positive direct drive in all gears for maximum fuel economy. A typical Torquatic drive is shown in Fig. 1.

Little need be said about the torque converter itself, except that it is a genuine converter as opposed to just a fluid coupling.

### The six geared speed ranges are

controlled by self-adjusting clutches rather than bands. According to Schaefer, they need no adjustment.

There are three driving ranges under driver control . . .

- 1. In "Drive" the unit starts in third, shifts automatically through fourth, fifth, and sixth gears.
- In "Intermediate" (primarily for city operation in which quick responsiveness is desired), it operates only in third and forth gear.
- The "Low" range uses only first and second gears and is primarily for off-highway or steep grade-climbing use.

The automatic lock-up clutch works in all gear ranges. This means that as soon as the torque converter has brought the vehicle's speed up to the appropriate engine speed, the transmission goes into direct mechanical drive. It comes out of the lock-up only for a moment to shift to the next speed. The advantage of direct mechanical connection is thus retained.

### The built-in retarder has a

braking force equivalent to the accelerating force of a 600-hp engine. The same oil that drives the converter turbine absorbs the braking horsepower. The resulting heat is dissipated harmlessly through the oil cooler.

One of the features that attracted special attention from the utility fleetmen is the power take-off driven by the torque converter. When engaged, it has the same torque converter characteristics as the transmission has for vehicle propulsion. As the load demand changes from no-load to full load, the power take-off handles the increase through the converter's ability to multiply engine torque. Although engine speed is reduced slightly, there is no danger of stalling the engine. A typical power take-off installation is shown in Fig. 2. Allison's design provides two six-bolt power take-off openings, one on each side.

(TURN TO PAGE 119, PLEASE)



### SHOP

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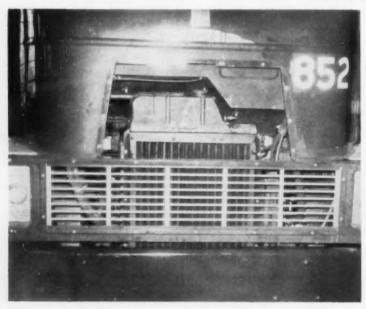
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Send us a short description and photograph or simple sketch of the shop-made maintenance short cuts you are using. We'll pay \$10 and \$25 to those who submit good ideas

### Radiator Petcock Checks Coolant Level

From the shops of Smith's Transfer Corp., Staunton, Va.



To keep drivers and mechanics from over-filling cooling systems, all Mack tractors are shop-equipped with a petcock in the lower end of the top radiator tank. To check coolant level, open petcock. If water runs out, level is OK, even though it may be as much as 2 gal. low. This simple device avoids breaking the pressure seal and has saved a great deal of anti-freeze consumption. It also prevents dilution by unnecessary adding on the road.

### Jig Speeds Generator Removal

From the shops of Lincoln Coach Lines, Irwin, Pa.

To remove and install generators on 471 and 671 GMC diesel buses, this jig cuts time and labor (one man). It's shaped to hold a generator and fits on the end of the shop's mobile crane. With the device to support the generator, removal or installation time is cut to almost 10 minutes. There's no more crawling in over the transmission to get at the generator and no more sliding it out on a board. An adjustable screw on the base of the jig permits aligning the generator bolt holes once the nose of the crane has been pushed into the engine compartment.

### Wagon Gives Batteries Smooth Ride

From the Shops of the Nashville (Tenn.) Transit Co.

This shop-made battery wagon is specially designed for crossing rough floors, cobblestone streets, high door sills, etc. It is mounted on three low-pressure wheelbarrow tires. The single pivot wheel trails under the push bar. All axles and the swivel bearing are alemite-fitted. The wagon bed and the battery stand are the same height so that heavy batteries can be slid right on the wagon.

### Blower Shaft Remover Saves Time

From the shops of Frisco Transportation Co., Tulsa, Okla.

To remove worn rotor shafts in diesel blowers in 10 minutes instead of an hour, try this shop hint. Machine to body diameter the head of a 1/2-in. bolt, 4-in. long. Cut a new thread in the blank end. Grind down a castellated nut small enough to fit through a freeze plug hole, but big enough to lodge against the shoulder within the rotor shaft. This nut fits on the new threads of the bolt. Remove the freeze plug in the rotor lobe opposite the tapered pin hole. Drive the pin back until it drops into the rotor body. Drive the plug inside the rotor shaft back into the rotor body. Drop the machined bolt through the freeze plug hole, nut end first. A shake or two and the bolt will go into the rotor shaft and slide it down until the nut is against the shoulder. Use spindle bolt thrust washers to fill extra space on the bolt as it sticks out of the rotor shaft. Cap the bolt and washers with a bearing and nut. Then screw down to pull out the shaft.

### Fuel Oil Tank Makes Cleaning Tank

By Luke Banks, Auto Clinic, East Detroit, Mich.

Here's a slick way of making a handy parts cleaning tank from an old 225 gal fuel oil storage tank. Cut away a quarter side section, as shown. Add a small wire mesh shelf above for placing small parts to drip dry. Put cleaning solvent in the lower section of the tank with provision for draining at one end. The curved top of the tank traps fumes so that the mechanic is protected.









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Central Motor Lines, Inc. has an interesting division of maintentance responsibilities. Of the 154 COE Mack diesel tractors, 100 are based at the Greensboro terminal. They get all routine maintenance there under direction of Maintenance Supervisor John W. Gay.

But engine overhaul (along with maintenance of 54 Mack diesel tractors, trailer maintenance and tire supervision) is handled at the Charlotte headquarters shop under the guidance of Maintenance Supervisor Frank Whitlow.

This article, developed by the CCJ mobile editorial team, concerns the special procedures developed by the engine shop crew.

### **Try These**



FIG. 1. Special jig for clutch housing bore supports oversize dowel reamer at shank, gives proper alignment

ENGINE OVERHAUL procedures can be streamlined to pay real dividends when a fleet shop concentrates on one make and, largely, one model engine. Such is the case at the Charlotte, N. C., engine shop of Central Motor Lines, Inc. . . . and the fleet's 154 Mack diesels.

Five of these special techniques especially interested COMMERCIAL CAR JOURNAL'S Mobile team . . .

- · Clutch housing adjustment.
- · Engine block alignment.
- · Cylinder head leaks.
- · Break-in oil filtering.
- · Dynamometer run-in.

### Clutch housings should be checked and

irregularities corrected during disassembly, says shop man Dave Carter. "We get more accurate measurements with a free turning shaft."

First part of the procedure is standard. When pistons, clutch and flywheel have been removed, they use a dial indicator to check the inner edge of the clutch housing bore. If it's out by more than .005 in., it must be relocated.

### First step in relocating

to remove alignment dowels, recenter the housing

and torque the bolts in place. Then Central uses a special jig (Fig. 1) to assure perfect alignment of an oversize dowel reamer by supporting it at the shank.

The jig is bolted to the clutch housing. It's made of 3% x 3-in. flat stock and fitted with removable bushings to accommodate different reamer sizes. Mounting holes are elongated to permit exact centering of the bore.

### The clutch housing outside flange

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surface gets attention next. If the distortion exceeds .005 in., Central grinds it in place using a special holder (Fig. 2) for a 1-hp grinder. Holder bolts on the crankshaft flange, keeps grinder in alignment.

"Here" reports Carter, "experience was the best teacher. Prior to using the grinder, we removed the housing and sent it to an outside shop for resurfacing. But it didn't work. All too often, we got the reworked housing bolted back in place only to find the run-out still excessive, due to block wear. By grinding in place, we get a perfect job every time."

### Block distortion is checked with

heavy steel bar. It's carefully machined to exact diameter of the bearing saddles without inserts. It's just long enough to reach both ends of the block.

### Tips for Better Engine Overhaul

Here's how Central Motor Lines gets top mileage from its Mack diesels



FIG. 2. For grinding outside flange of clutch housing, Central uses special holder bolted to crankshaft flange



FIG. 3. Using valve guide reamer held flat, draw it across block and cap surface to remove burrs, rough edges

With block upside down, crankshaft and bearing inserts are removed. Caps are then bolted back in place. They next clean the saddles and caps with a valve guide reamer. This is done by holding reamer flat with both hands and drawing it across entire surface of both block and cap (Fig. 3). This removes burrs and other rough edges.

With the cleaning job done, remove

the caps and carefully lay the alignment bar in the bearing saddles. Now they check for excessive clearance or binding. This is done both with a feeler gage (Fig. 4) and, with the caps bolted back in place, by turning the alignment bar with a pry bar (Fig. 5).

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If clearance or bind is not excessive—permitting shaft to turn freely, Central considers the block in alignment. In this case it uses pre-sized main bearing inserts. However, if the feeler gage or turning the alignment bar indicates misalignment, corrections are made to the main bearing cap and then the block itself is line bored and pre-sized inserts are used.

Cylinder head leaks are soon

detected at Central thanks to a pre-assembly check.

(TURN TO NEXT PAGE, PLEASE)



FIG. 4. Lay alignment bar in bearing saddles and check with a feeler gage for excessive clearances or binding

FIG. 5. Also check clearances with bearing caps boited back in place by turning the alignment bar with pry bar



### Tips for Better Engine Overhaul . . .

Continued from Page 77

The trick is to check the heads under normal operating pressure.

To do this, they took an old cylinder block, broke off the lower section and mounted it on a steel stand. Next, they rigged up a special lifting jig (Fig. 6) which takes two heads at a time. To these they attach two front water manifolds, reworked to accommodate a pressure gage, water and air fittings.

### This assembly is then lifted onto

the test block and torqued down using a heavy rubber gasket to seal off water passages (Fig. 7). Hot water from the building water supply is run through both heads until they reach normal operating temperature. Then the water valves at both ends of manifold are closed, and 150 lb of air pressure is applied.

The whole operation is done with valve assemblies removed in order to get a good look into the valve ports. Many hidden cracks have been discovered by this method and repaired before valve work is completed.

### Clean break-in oil during

dynamometer run-in is assured by means of a special filter. It consists of a shop-built manifold connecting four Purolator scraper type filter elements (Fig. 8). A fitting on the manifold screws into the intake side of the engine oil pump. There is also a shop-built sump (Fig. 9), to house the filter assembly. This bolts to the screen cover opening in the bottom of the crankcase. The only engine modification necessary is to tap pipe threads in the lower casting of the oil pump.

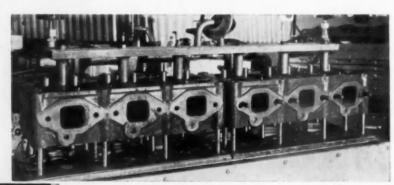
Again experience was the best teacher. At first the fleet tried just one filter element. But lint and other debris soon covered the surface, blocking the oil supply. Next they tried two and finally four to be sure of a positive flow.

### The dynamometer itself contains

unusual features. A large heat exchanger (Fig. 10) constructed of monel metal does much to control engine temperature. One side of the exchanger is connected to the engine cooling system and operates as a closed circuit just as a radiator would in normal truck service. This method not only conserves water but assures uniform temperature in the engine block during the run-in by using the water from the dynamometer which is preheated to about 140° by the dynamometer.

There are also three flexible air lines to the roof. One supplies intake air direct from the air cleaner on the roof to the engine. Another carries exhaust gases out. The third is connected to the engine valve chamber breather to keep oil fumes out of the room.

FIG. 6. Check heads for leaks before assembly. Special lifting jig here moves two heads at once. Cuts time



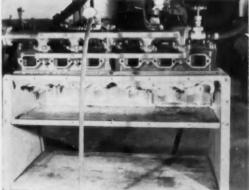


FIG. 7. Both heads are torqued down on test block using rubber gasket to seal off water passages. Hot water heads to normal operating temperature. 150 lb of air finds any leaks



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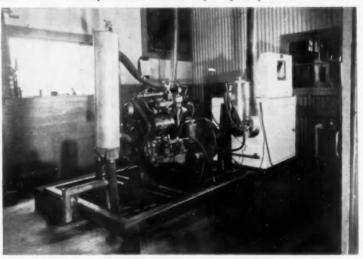
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FIG. 8. Clean engine oil during dynamometer run-in is important. Central uses four fuel filter elements. Manifold screws into side of oil pump



FIG. 9. To house the special filter assembly, a shop-built sump bolts to screen cover opening on crankcase. Filters keep out any dirt or grit

FIG. 10. Heat exchanger handles water from engine and dynamometer. Hot water from dynamometer warms up engine, prevents cold starts



### R. C. Thomas is ATA's "Driver of the Year"



A 29-YEAR-OLD Alabama tractortrailer driver last month was named national "Driver of the Year" by the American Trucking Assns. Reuben C. Thomas is an over-theroad driver for the Sessions Co., a peanut butter manufacturing firm of Enterprise, Ala., and holder of a 585,-000 mile accident-free record.

Thomas was cited for his heroic rescue of a woman trapped in a burning car. The accident took place last July on Route No. 301 near Selma, N. C. A convertible had skidded on the wet road and hit a pole, rolled over and was burning when Thomas arrived on the scene. Three occupants of the car had been thrown clear. The fourth lay unconscious in the burning car.

### Trying to reach

the woman, Thomas was knocked down four times by electric current from the broken wires which had fallen on the car.

Finally, the wires burned in two and he was able to get the woman out of the car. Seconds later the gas tank exploded.

Thomas was nominated for the national award by the Alabama Trucking Assns. and the Ala. Council of Safety Supervisors. He was selected as the Alabama "Driver of the Year," received the Markel Service "Distinguished Merit Award" and the Arthur Godfrey "Gentleman of the Highways Award."

Thomas was selected by ATA for the national award because of his outstanding safety record and heroic actions.

As Driver of the Year, Thomas and his wife will be invited to visit Washington and later spend a week in New York City as guests of the American Trucking Associations.

### Despite an industry trend

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### **Inland Likes its**

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SAFE DRIVING pays off for drivers and management at Inland Petroleum Transportation, Seattle, Wash.

For drivers, there's a bonus plan which offers up to \$360 a year for accident-free driving. Management reaps its rewards in terms of lower costs, dependable schedules, and company growth.

The bonus plan has been used

for years, as an extension of the National Safety Council's driver award program. Standard MSC awards are used for a driver's first four years of accident-free driving. When he earns a five-year award, however, he also becomes eligible for the bonus.

The plan uses NSC definitions of chargeable and non-chargeable accidents. If a man reaches the five-year mark without even a non-chargeable accident on his record, he not only qualifies for the bonus but also receives a company watch.

After 10 years of driving without

a chargeable accident, a driver has the option of receiving a watch instead of the bonus for the tenth year.

Monthly bonuses are: \$10 during the sixth to tenth year; \$20 during the 11th to 15th year; \$30 during each year after 15. As a result, a man with a record of 15 years without a chargeable accident can gain a bonus of \$360 for each year he keeps his record.

A chargeable accident during the first three years on the job means a man must start all over to build his record. After receiving a three-year award, however, a chargeable accident cancels out only the year in which it happens from the man's safety record. For example, if a man has a chargeable accident during his fourth year on the job, he must drive two more years without a chargeable accident before earning the five-year award.

Following standard fleet practice, the company has an accident review board. It's composed of four drivers, the general manager, assistant general manager, shop superintendent and the dispatcher. The driver representatives are elected by their fellow

drivers. When possible, an insurance company representative serves on the Accident Committee.

Both the driver and the company have the right to appeal the Committee's decision. The appeal is

### **Driver Bonus Plan**

usually acted on at the next Committee meeting. The driver is entitled to be present if he desires. If after this meeting, either the company or the driver are satisfied, the matter goes before the local chapter of National Fleet Supervisors. It is agreed in advance that their action is final.

As part of its safety campaign, the company has put many posters on its bulletin boards with such admonitions as . . .

· "Be bright, dim your lights."

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- "Changing lanes? Do it right! Check rearview mirror. Signal well in advance. Pull out only when your have clearance."
- "Remember Winter driving demands extra caution."

You get some idea of the effectiveness of the bonus and safety promotion program from these facts:

- Last year 42 of the firm's 51 regular drivers received NSC awards. In 1956, 43 men were honored.
- One man has a record of 22 years without an accident of any kind.

Drivers operate over mountainous terrain in Washington, Oregon, Idaho, and the Canadian western provinces.

Mr. J. Ray Drexel, assistant general manager, in commenting on the program says, "We find it works very successfully and results in very few accidents. We do not high-pressure our drivers to maintain their schedules under icy and snowy conditions. The trip to Yakima and return on the other side of the Cascade Mountains takes 11 hours under normal conditions, however we allow our drivers to take double the usual time when conditions are icy and unsafe. We have safety meetings of our drivers quarterly. A driver who comes on duty in an intoxicated condition is automatically discharged.

"In our educational programs, we send our young drivers out with the older experienced drivers so that the neophytes can learn from the experience of the older men. The drivers are all taught to be courteous and not to pass on hills or curves. Each driver receives bulletins and booklets from the National Safety Council."

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### Inland Uses Running Shop Order

ONE FORM now does the work of 20 in Inland Petroleum Transportation Co.'s record system. In the past, Inland used a detailed repair order sheet for each job and for purchasing outside service. Even a routine lube job required a repair order.

Now, except for unusual jobs, servicing is shown on a line of a card which is kept for each truck. The card shows all the essential data, and costs can be easily tabulated at the end of the month.

### The new form has vertical

columns for the date, speedometer reading, mechanic or greaser's name, starting time, stopping time, man-hours on the job, quantity of each of three possible lubricants used, and "Remarks." This last column has space for noting brief descriptions of service done. There are columns set up across the bottom of the form to show cost data.

Inland operates 45 highway combinations of which 32 are full trucks and trailers and 13 are tractors and semi-trailers.

Although established to move petroleum products exclusively, it now transports cement, 20 different kinds of chemicals and a number of food products. They operate rubber-lined tanks for muriatic acid and insulated vehicles for hot road oils that have a temperature ranging from 200 to 450 deg. They also transport stainless steel tanks for sulphuric acid and such food products as corn syrup, vinegar and liquefied sugar.

Intervals between overhauls average approximately 200,000 miles. The overall cost of the fleet operation including driver's wages, fuel, maintenance, licenses and taxes average 42¢ per mile of which only 4½¢ per mile is required for maintenance.

### HIGHWAYS ARE BEING BUILT

You can see them and ride them, as the road building program gathers momentum despite problems with diversion and inflation

AT THE END OF JUNE as the federal government closed its books on the second year of the gigantic Highway Act of 1956, one thing seemed certain...

Highways are being built.

Best estimate comes from the highway builders themselves. Says American Road Builders' Assn. Executive Vice President Louis W. Prentiss: Highway construction expenditures for the 12 months of 1958 will total \$5.3 billion—after deducting right-of-way and preliminary and project engineering expenses!

Further, estimates Prentiss, the 12-month total for 1959 should reach \$6 billion—\$1.3 billion more than

was spent on highway construction in 1957.

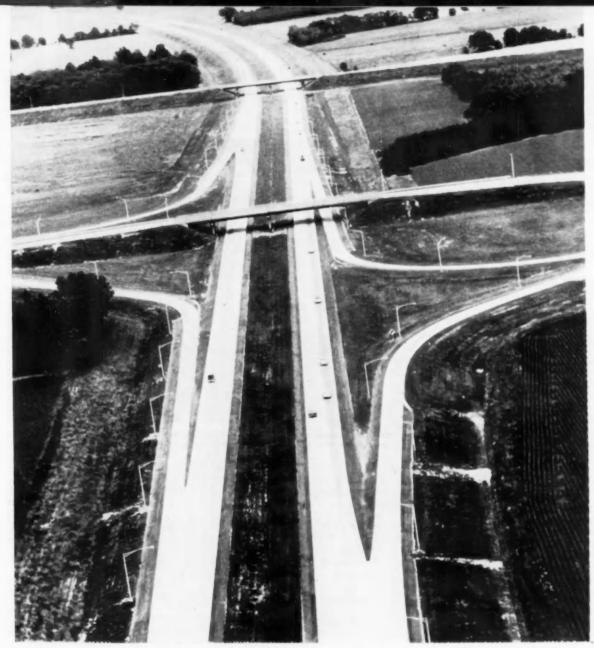
The estimates are based on the authorizations of the 1956 Act plus the "anti-recession" Highway Act of 1958 (May, page 33). A healthy amount for maintenance of roads already built should be added for a more realistic estimate of highway spending.

Some controversy surrounds

whether or not these construction outlays should be greater... whether or not the highway building program is on schedule. Congressman Hale Boggs opened his talk at the National Highway Users Conference's Highway Transportation Congress in May with the

Modern highways are getting on the landscape, off the drawing boards as annual construction reaches \$5.3 billion





Motorists can now use some 3000 miles of the Interstate system's 41,000-mile total, with 3000 more being built

comment, "... I am somewhat discouraged about the slowness which has characterized the inception of the program... I am afraid that despite the reassurances coming from the Administration, the program is behind schedule."

On the other hand, Federal Highway Administrator Bertram D. Tallamy told the Associated General Contractors of America at their annual meeting that the federal highway program is on schedule nationally. He inferred that building of highways would soon expand rapidly, saying, "The first 18 months of the program made possible by the Federal-Aid Highway Act of 1956 may be slow compared to the lead time or tool-

ing-up period in private industry for a tremendous expansion of production."

### The hard facts are best

expressed in miles of road. As of the end of April this year, the 41,000-mile National System of Interstate and Defense Highways totaled some 8252 miles either finished or underway. Included were 2102 miles of toll highway (1837 miles completed, 265 miles being built) that Congress has yet to decide whether to pay for and set free or leave as toll facilities. On the free side, there were 1454 miles finished, 2714 miles being (TURN TO NEXT PAGE, PLEASE)

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### **Highways Are Being Built**

Continued from Page 83

built and 1982 miles "programmed."

On the primary, secondary and urban extension federal aid program, some 39,423 miles were completed between July 1, 1956, and April 30, 1958.

And, as of April 30, the Bureau of Public Roads reported some 37,-942 miles on these systems underway . . . 21,579 miles being built, 3263 miles ready for contract and 13,100 miles "programmed."

In addition, 672 miles on these systems were "programmed" under the then just-enacted 1958 Highway Act.

Incidentally, the primary federal-aid system (not including the Interstate highways) totals some 194,000 miles of eligible routes plus 520,000 miles of eligible routes on the federal-aid secondary system, all of which need continual improvement in one place or another as traffic volume increases.

In addition to the federal-aid mileage, the Bureau of Public Roads reports 7806 miles of highway contract let from January through April on non-federal-aid projects.

Progress in highway building

can also be measured in terms of the equipment and materials used. For example, American Road Builders Assn. estimates it takes 57,804 pieces of equipment (with an estimated life of seven years) to build \$1 billion worth of highway.

In terms of material, ARBA estimates 1957 and 1958 highway consumption as follows . . .

	1957	1958
Structural steel (millions of tons)	1.2	1.3
Reinforced steel (thousands of tons)	926	1039
Cement (millions of bbls)	80	90
Bituminous materia (millions of tons)	7	8

Also says ARBA, just prior to the added impetus of the 1958



New estimates of 1.2 trillion vehicle miles of travel by 1975, if realized may mean that present program will have to be expanded to meet 1970 need

Highway Act, orders placed by contractors largely for 1959 delivery included . . .

Added construction
fleet equipment \$175 million
Structural steel 290,000 tons
Reinforced steel 200,000 tons
Cements 15 million bbls
Bituminous

material 1.6 million tons

Of course, somebody has to pay for all this, and this time it's by and large the highway user. Trucks are paying a heavy share of these highway use taxes. Automobile Manufacturers Assn. reports that trucks paid almost \$2.2 billion in state, local and federal highway use taxes in 1956. Increased federal highway use-including the federal weight taxtaxes went into effect July 1 that year, so it is obvious even without current data that the nation's truck and bus fleets are presently paying much more than the '56 total for their use of the highways.

Fortunately, the Highway Act of 1956 set-up a Trust Fund for the income from the increased federal excises. Use of this fund is restricted to federal-aid for highways. As of the end of April there was over \$1 billion in the Fund . . . most of which—highway use taxpayers will be interested in knowing — was earning interest (almost \$6.9 million between July 1, 1956, and April 30, this year.

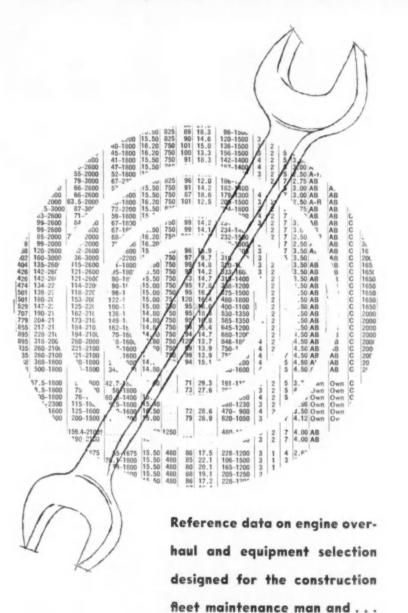
Income to the Trust Fund since it was set up in July, 1956, totaled \$3,269,079,259 as of April 30 this year. Presently almost all federal highway use taxes go into the Trust Fund. One notable exception and sore point is that excise taxes paid on purchase of new passenger cars and half of excise taxes paid on new trucks and buses go into the general fund.

In addition to these

funds which never go into the Trust Fund, attempts were made within the past year to use money from the Trust Fund for other than federal-aid highway construction (Feb., page 33). Protesting that the attempted diversion amounted to amending the Highway Act of 1956 in an appropriation measure, Congressman Boggs

(TURN TO PAGE 146, PLEASE)





### **Engine Service Data**

Handy tables to speed your engine overhaul, repair, service

Allis-Chalmers	C2
Caterpillar	
Continental	C6
Cummins	C5
Ford	C14
General Motors	C4
Hercules	C8
International Harvester	C10
Oliver	C9
P & H (Harnischfeger)	C5
Roiline	C13
Waukesha	C12

### **Engine Specifications**

Basic engine data to help you pick the right engine

Gasoline	Engines	 	C15
Diesel En			CIS

### **Equipment Specifications**

Easy reference charts for your use in choosing new equipment

Heavy-Duty Trucks	C20
Crawler Tractors	
Graders	
Scrapers	
Powered Rollers	
Front End Loaders	
Dumpers	
Air Compressors	
Directory of Manufac- turers	C22
TUTETS	~36

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1958

## **Allis-Chalmers**

HD-516	6,4378 6,4625 516.0 45,2015 500-800 1886-2015 1800 18,00	-48 - 0469 - 0625 - 0020 - 0040 - 0020 - 0040 2 - 5563 1 - 3125 1 - 3125	2888	3.498-3.498 2.772-2.773 .006012	.00200047	.00150040 .004011 3.0260-3.0256	4,4365-4,4385	4, 406, -4, 410 4, 431 , 0045, -0077 , 0015, -0050 , 0015, -0040	160-170 210-230 130-130 180-165	9 17 8	40 20 20 40 10M
HD-344	4 4275 5.625 3.44.0 45.1955 500.580 1900.1986 11.00	48 .0468-, 0625 .0020-, 0040 2.6863 2.3126 3.126	2 0 0 0 0 0 0 0 0	3.488-3.489 2.772-2.773 .006012	, 0020-,0047	.0015 .0040 .004 .011 3.0250 -3.0285	4,4385-4,4385	4, 406-4, 410 4, 431 , 0952-, 0077 , 0045-, 0060 , 0015-, 0036	160-170 210-230 210-230 120-130	40 40 40	40 30 20W 10W
D-262	6 6625 4 3750 262.0 600			111111111111111111111111111111111111111	:	111				9.0 5	30 20 20 10W
D-230	6 (375 4 (250 230.0 80 (125 25-202 875-360 1875-360 1875-375 18.25 375	45 .06261250 .00150030 2.0313 1.7500 1.4063	14080	2,497-2,498 1,988-1,999 ,002-,006	, 9023-, 0045	. 0015 0035 . 002 007 2. 1600-2. 1605	3,4379-3,4386	3,409-3,413 3,422-3,434 0,0040-,0050 0,0020-,0040 0,0015-,0030	125-135 125-135 30-40 86-105	© 10 € 00 €	40 30 20W 10W
WD-45	4,0000 4,0000 228,0 59,1400 28,1722 460-500 1877-1722 1400 126	45 . 0625 . 0025 . 0045 . 025 - 045 2 . 3125 1 . 8125 1 . 4375	3775 3275 775	2.436-2.478 2.374-2.376 .003-,007	.0011-,0037	. 0010 0030 . 004 008 2. 4495-2. 5005	4,000	3.976 3.997 .00250035 .00100015 .00100015	88 88 40 40 90	27.28	30 30 10 10
D-17	4,0000 4,5000 226.0 330,380	8		2.998-3.000 2.374-2.376 .00460130	***************************************			.002 .003	130-140	143/2	30 20 20 10W
D-14	3.8000 3.8750 149.0 5.15 400			2,748-2,749 1,9368-1,9378 ,004-,008	****	100 mm / 100		. 0148	80	2 4 15 2 4 15 2 4 15	30 20 20 10W
Engine Model	Number of Cylinders Bere (In.) Piston Displacement (Cu. In.) Piston Displacement (Cu. In.) Oil Pressure at RPM Minimum folls Speed (RPM) Governed Speed at Full Load (RPM) Compression Ratio	Seat Majle (Jog.) Seat Width (In.) Seat Width (In.) Seat Width (In.) Valve Guide Genamer (Intake) (In.) Valve Guide Genamer Exhaust (In.) Spring Length - Free (In.) Spring Length - Valve Greed (In.)	Valve Timing Inlet Opens – BTDC (Dog.) Entel Coses – ABDC (Dog.) Exhaust Opens – BBDC (Dog.) Exhaust Closes – ATDC (Dog.)	Crankshaft Main Bearing Journal Diameter (In.) Crankpin Journal Diameter (In.) Crankshaft End Clearance (In.)	Main Bearing Clearance (In.)	Connecting Red Bearings Bearing Bearings Bearing Bearing Bearing Element (In.) Bearing Bore (Cap in Place) (In.)	Cylinders Luner Inside Diameter (In.) Liner Finge Outside Diameter (In.) Liner to Block Clearance (In.)	Pistons and Rings Diameter—To of Piston (In.) Diameter—Bottom of Stirr (In.) Clearance—Piston Skirr Io. Clearance—Piston Skirr Io. Clearance—Ring to Groove Top Ring (In.) Oil Rings (In.) Oil Rings (In.)	Nut and Bolt Torque Values Main Bearing Cap Retaining Nut Center Main Barring Cap Nut Only Connecting Road Bearing Cap Nut Cylinder Head Stud Nut (Ft. Lb.)	Canartites Cooling System (Qts.) Eaglen Crankcase (Qts.) Argiene (Pts.) Fuel Tank (Gals.)	Engine Lubrication 50 Degrees and Above 32 to 60 Degrees 0 to 32 Degrees 0 to 32 Degrees 1—Also AC 45-47; Champion J8-J11.

C2

TDS-844

TDS-516

HDS-844

TD-844

HDT-844

HD-844

ADS-516

Engine Model

### ENGINE SERVICE DATA

TDS-844	6 2.2800 6.3800 8.4800 844.0 280-2100 48.2150 500-600 200-600 13.00 415	45 . 0468 . 0825 . 0040 . 0035 . 0040 . 0085 3 . 7500 2 . 7500	30 30 30 30 30 30 30 30 30 30 30 30 30 3	3,745-3,746 3,248-3,249 .007015	.00180045	.0015 .0040 .004 .011 3.4995 3.5000	5.251-5.252 6.217-6.221 .001004	5.209 5.213 5.237 5.238 .013.015 .0040.0060 .0015.0035 .0015.0030	160-170 245-270 135-140 180-185	62 36 12 135	40 30 200W 100W	
TDS-516	6.4376 5.5625 516.0 500.550	99		3.488-3.499 2.7718-2.7725 .006012	***			.006 .008	160 170 210 230 120 130 180 185	37	40 30 20 <b>W</b> 10 <b>W</b>	
HDS-844	6 2500 6 5000 844.0 500 550 1000 550 1300 45 1900 13.00	46 - 0469 0625 - 0020 0035 3, 2800 2, 7800 2, 7800	30 35 30 70	3,745-3,746 3,248-3,249 ,005-,015	.00210048	. 0025 . 0050 . 004 . 011 3. 4995 3. 5000	5, 2610 5, 2620 6, 217 6, 221 , 001 -, 004	5, 209, 5, 213 6, 227, 5, 238 0, 130, 0150 0, 0015, 0035 0, 0015, 0030 0, 015, 0030	245 275 150 160 136 140 180 185	80 30 12 135	40 30 220W 10W	
TD-844	5, 2560 6, 5000 844.0 500 600 2140-2200 2200 14.10	45 .0466 .0825 .0020 .0035 .0040 .0055 3 .2800 2 .7800	220 440 15	3,745-3,746 3,248-3,249 ,005,015	,0021-,0048	. 0025 - 0050 . 004 - 009 3. 4995 3. 5000	5.251.5.252 6.217.6.221 .001.004	\$ 222 5.28 \$ 240 5.241 .0010 .0012 .0040 .0050 .0015 .0030 .016 .0030	160-170 245-270 135-140 180-185	60 32 8 100	40 200W 10W	
HDT-844	6.52600 6.59000 6.59000 6.960 1.6600 4.51 1980 5.85 5.500			3,745-3,746 3,2475-3,2485 .007015	***			.015	160-170 245-275 136-185	31	40 30 20W 10W	
HD-844	6.5500 6.5500 844.0 50.1740 500.550 1850.1740 1800.1740 1800.1740 4.5	45 . 0489 . 0625 . 0020 . 0035 . 0040 . 0055 3 . 2600 2 . 7500 2 . 2031	20 45 15	3,745-3,746 3,248-3,249 ,005-015	,0021-,0048	.0025 .0050 .004011 3.4995 3.5000	5.291-5.282 6.217-6.221 .001004	5, 225, 5, 226 5, 240, 5, 241 , 0010-, 0012 , 0018-, 0035 , 0015-, 0030	160-170 245-275 138-140 180-185	100 100 100	40 20W 10W	
ADS-516	6.4375 5.8626 5.1620 120-1600 45-1600 500-550 1750-1600 1800 14-20	45 , 0499 - 0625 , 0020 - 0040 2, 6553 2, 3126 1, 8125	30 40 70	3, 498-3, 499 2, 772-2, 773 .006-, 012	,0020 ,0047	.0015 .0040 .004 .011 3.0250 3.0285	4, 4365-4, 4385	4, 406 4, 410 4, 431 , 0062 , 2007 , 0040 , 0035 , 0020 , 0030 , 0150 , 020	210-230 170-180 120-130 180-185	38 8 83	40 20W 10W	
Engine Model	Number of Cylinders Bore In. Psino Displacement Cu. In. Psino Displacement Cu. In. Developed Horsepower at RPM Minimum Idle Speed (RPM) Minimum Idle Speed (RPM) Maximum Idle Speed (RPM) Coverned Speed at Pull Load (RPM) Coverned Speed	Valves Seat Motio (Deg.) Seat Width (In.) Seat Width (In.) Valve Guide Clearance (Intake (In.) Valve Guide Clearance Exhaust (In.) Spring Length Free (In.) Spring Length Valve Closed (In.)	Valve Trinting Inter Opens - BTDC (Deg.) Inter Opens - ABDC (Deg.) Enhants Opens - BBDC (Deg.) Exhaust Closes - ATDC (Deg.)	Grank-shaft Mahn Bearing Journal Diameter (In.) Crankini Journal Diameter (In.) Grank-shaft End Glearance (In.)	Main Bearings Bearing Clearance (In.)	Connecting Rod Bearings Searing Clearance (In.) Side Clearance (In.) Bearing Bore (Cap in Place) (In.)	Cylinders Liner Inside Diameter (In.) Liner Frange Ostschie Diameter (In.) Liner Fage Ostschie Diameter (In.)	Pistons and Rings Diameter—Botton of Piston (In.) Diameter—Botton of Skirt (In.) Clearance—Riston Skirt to Cylinder (In.) Clearance—Piston Skirt to Cylinder (In.) To B Ring II. Out Rings (In.) Ring Cap (In.)	Nut and Bolt Terque Values Main Bearing Cap Retaining Nut Comerter Main Bastring Cap Mut Only Connecting Rod Bearing Cap Nut Cylinder Head Stud Nut (Ft. Lb.)	Caparcilles Cooling System Qts.) Engine Crankiasse Qts.) Engine Crankiasse Qts.) Fuel Tank (Gals.)	Engine Lubrication 39 Degrees and Albeve 32 to 60 Degrees 0 to 22(Degrees 0 Degrees and Below	

### 2 Caterpillar

Engine Model	Number of Cylinders Store (In., Store (In., Piston Displacement (Cu. In.)	Valves Valves Intake Extense Tappet (Segrance (Hot) (In.)	Exhaust	Ring Cao Clearance No. 7 (In.) Fing Cao Clearance No. 2 (In.) Fing Cao Clearance No. 3 (In.) Fing Cao Clearance No. 4 (In.)	Ring Side Clearance No. 1 (In.) Ring Side Clearance No. 2 (In.) Ring Side Clearance No. 3 (In.) Ring Side Clearance No. 4 (In.)	Crankshaft End Play (In.) Main Bearing Journal Diameter (In.) Connecting Rod Journal Diameter (In.)	Tensions (Ft. Lbs.) Connecting Fd Bearings Main Bearing. Cylinder Head Studs. *—Also available as graeoline engine.
D397	12 8 8 2493	45 0.01 0.10	.016	. 0195 . 022 . 020	0038	. 0155 5,500 4,625	150 445 230
D375	88 88 88 88 88 88 88 88 88 88 88 88 88	84.4 010	.016	. 0195 . 022 . 022	0038	. 0155 5.500 4.625	150 445 230
D353	6 8 1473	30 30	.025	.027	0028	. 0155 4. 624 4. 124	300
D342	8 8 8 1246	45.036	910.	.0195 .022 .022	00058	3.750	150 350 250-105
D339	45.88	45.016	.016	. 022 . 022 . 020	.0055	3.750	150 350 250-105
D337	0 0 0 8	90 00.	.020	.0228 .023 .023	0037	4.250	165 285 285
D326	\$ 6 6 8	90 00 018	.020	023	.0037	4.250	160 165 285
D318*	84 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	48.	010.	.0125 .015 .015	0031	3,500	58 120 130-65
D315*	35,5	25 010	010	. 0126 . 015 . 015	,0036 ,0031 ,0025	. 012 3.500 3.000	58 120 130-65
D311	282 282	30 00	910	0128	.0036	. 0150 2.9995 2.6245	0 15 10 10 8 0

## General Motors

Engine Model	51	17	110	Engine Model.	51	17	110
Number of Cylinders	*	21	0	Rings Changenger In	090	000	000 360
Bore (In.)	4.1000	4,2500	5.0000	Side Clearance (In.) No. 1	.00950125	.01000125	
Stroke (In.)	4.1000	5.0000	5.6000	No. 2 Nos. 3 and 4	.00750105	,0080-,0105	.00800110
Displacement (Cu. In.)	216.5	142.02	0.089	Crankshaft			
Horsepower	98	653	300	End Thrust Clearanee (In.) Main Bearing Journal Diameter (In.) Connecting Red Journal Diameter (In.)	3.617-3.618	3.489-3.500	3.249-3.330
Oil Pressure at RPM 'Lb.)	45 2200	50-1800	50-1800	Tancinas (Ft Lh.)			
Minimum Icle Speed (RPM)		900	900	Connecting Rod Nut Main Bearing Nut	54-59	65-75	65-75
Valves Seat Angle (Deg.) Tappet Clearance (In.)	None	30	30	Cylinder Head Nut. Flywheel Botta Manifold Nut.	150-160 130-140 83-93	165-175 150-160 30-36	150-160 150-160 35-40
Cylinders Maximum Allowable Taper (In.) Maximum Allowable Ou. of Round (In.)	.002	.002	. 002	Lubrication A.P.1, Service Classification Minus 10 Deg. Plus 10 Deg.	10W 20W	10W 20W	10W 20W
Piston Skir: C earance (In.)	.00370074	.0040 .0072	.00600097	Plus 37 Deg. Plus 90 Deg.	30	30	30
1 - Also 3, 4 and 6.		2-3 cyl. models, 21	3.0; 4 cyl. models, 28	2—3 cyl. models, 213.0; 4 cyl. models, 284.0; 6 cyl. models, 426.0.	ng on up to 236 hp. f	3-Ranging on up to 236 hp. for 3, 4 and 6 cyl. models.	

A480 6, 4 and 6.

													-	MGINE	: SEK	/IC	E DATA
687 C-18	5.50	522.0	16.00	1-6-2-4-3-5	88-100	325 400	.001003	2.375	26 BTC	4812 BBC	861/2 ATC 571/2 ABC 861/2 ATC 861/2 ATC	.008016	.0015033	4.477 4.486 4.497 .012038 .023028 .0050075	100 100 100 100 100	8	28.2
PEH Engine Model.  Number of Cylinders. Bore (In.)	Stroke (In.)	Displacement (Cu. In.)	Compression Ratio	Firing Order	Oil Pressure at 1800 RPM	Compression Pressure at 150-200 RPM.	Valve Guide to Stem Clearance (In.)	Spring Load (Glosed) (Lh.) Spring Length (Closed) (In.) Clearance (In.)	Timing Injection Pump Bandis. Rosa	Opens Closes Closes	Closes Closes Lift at Exhaust Valve	Crantishaft and Bearings End Thrust (In.) Mais Bashing Old Clearace (In.) Connecting Red Bearing Old Clearance	Connecting Red End Play (In.) Connecting Red Bushing to Pin Clearance Pistons and Rings	Poston Size (n.). Top Reform Patient to Head Compression Clearance Compression Ring Cap Oil Ring Cap Ring Aulai Clearance Compression Ring Aulai Clearance Compression	Torque Values (F. Lb.)  Main Bearing Cap Cylindre Head Studs Commercing Red Nats	Capacities (Qt.)	Crankeaso Radiator  REFERENCES BTC—Before top center: BBSC—Before bottom center. ATC—After top center. ABC—After bottom center.
NVH. VT-12	12	5,125	6.000	1486.0	424-210012	119021	5-60	200	30 30 .014 .027	74 82 104-114	100.	5.116	,008013 4.999 5.000 3.749.3.750	.006 .013	450 80 10 12	34 180	JN, 285; JNS,
LR, LRT	0	7.250	10.000	2477.0	320-110019	176020	20 40-60	900	36 . 014 . 018	99 121 226-250	:	. 0010 - 0040 7, 239-7, 240 . 015 - 625	.008016 5,499-5.500 4,249-4,250		550-650 60 15-20	180	14 JF 305; JS, 375; JN, 205; JNS, 377; JN, 205; JNS, 37 J8 20; JNS, 30; JN, 205; JNS, 30; JN, 205; JNS, 30; JNS
_	99	7.000	10.000	2309.0	265 1000	1650	20 80	200	30 30 014	99 121 226 250		.0010 .0040 6.990 6.991 .015 .032	. 008 016 5. 499 - 5. 500 4. 249 - 4. 250		550-650 60 15-20	72	
s, J, JF, JS, JN, JNS, JT	9	4,125	9.000	401.0	100 180011	30016	15.36 30.50	900	30 30 .015	44 (0, 2,016 111 (0, 1,61	100	4, 120	.004009 3.874 3.875 2.624 2.625		380,40017 22 10,1218 5	12 16	VT-12, 690.  Hrs. 673.  S. Stands, 60.  HRS. 733.  VH-20.  605.  NTO, 605, NRT, 810, NRTO, 900.
HR, HRS, NH-220, NHS, NHRS, NT, NTO, NRT, NRTO	9	5,125	6.000	743.0	174 18005	55015	5-55 30-50	900	30 30 .0146	110-1228 (0.2)1 179-1989 (0.2)5	100.	5.1200 .013 .026	. 007 - 013 4, 499 4, 500 3, 124 3, 125		430-450 40 10-126 6	16 2010	88, 027, 13 4, 13 10, JNS,
H, HS. NH-180	99	4.875	000'9	672.0	160-18001	51213	5 55 30 50	900	30 30 .0142 .0223	110-122 @ 214 179-198 @ 216	.001	4,8658 .010 .0254	4.499-4.500 3.124-3.125		430-450 40 10 1214 6	14 36	4 HRS model, 016 7 HRS, 008 NH, NHS, NHS, 718 82, 82, 81 NHS, 104 118 82, 83, 84, 84, 84, 84, 84, 84, 84, 84, 84, 84
Cummins Engine Model	Number of Cylinders	Bore (In.)	Stroke (In.)	Piston Displacement (Cu. In.)	Developed Horsepower at RPM	Maximum Torque at RPM (Ft. Lb.)	Lubricating Oil Pressure (Lb.) Idling to Governed Speed Normal at Governed Speed	Minimum Idle Speed (RPM)	Valve Seat Angle (Intake) (Deg.) Valve Seat Angle (Exhaust) (Deg.) Tappet Clearance (Intake) (In.) Valve Sections — I and In Common (In.)	Intake and Exhaust Closed Intake and Exhaust Open	Cylinder Liners Maximum Allowable Out of Round (In.)	Piston and Rings Ring Creove Clearance (In.) Piston Skirt Dameter (In.) Ring Cap Clearances (In.)	Grankehaft End Play (In.) Main Bearing Journal Diameter (In. Connecting Rod Journal Diameter (In.)	Connecting Rods Cleanance—Rod to Rod In.	Tensions F.L. Lb. Cylinder Pead Studs E. Ahast Manding Studs Injector Mounting Capacrees Injector Adjustment	Caparities Qt., Crankcase Cooling System	ABBREVIATIONS 2 - 15 model, 0.160, 140 3 - 15 model, 0.160, 140 4 - 185 model, 0.023 8 - 185 model, 0.023 8 - 185 model, 0.023 10 - NHS 200, NHS, 3200, NHS, 11 - Jl 200, NHS, 3200, NT, 2301, 11 - Jl 235, 245, NKT, 3001, NKTO,
COMMERCIAL CAR	Jo	UR	NAL	, J	uly,	. 19	58										C5

## © Continental (Gasoline)

		1								
Engine Model	F126	F226	F244	M330	M363	B427	T427	U501	R602	\$820
Number of Cylinders. Bore and Stoke (In.) Piston Displacement (In.) Horsapure at RPM (Bare Engline) Oil Pressure (Lb.) Maximum Idle Speed	4 317x496 182 48-2400 30-40 550-600	6 3 th x 49.6 22.8 73-2400 30-40 580-600	8 372495 244 79-2400 30-40 550-600	6 4x4% 330 104.4-2400 40-80 550-600	6 4x4+1 383 129-2400 40-60 550-600	6 4/5 x 4/5 427 129-2400 40-60 550-600	6 4/2 x 4/2 427 140-2400 40-80 550-600	6 475×574 501 180-2400 40-80 550-800	6 45,6x59,6 802 191,7-2400 40-80 850-800	6 63,4x5)-5 802 237-2200 40-60 850-600
Ignition Distributor Rotation—Drive End Cam Angle (Deg.) Point Gap (in.) Breaker Arm Spring Tension (Oz.) Spark Cocurs Firing Order Location of Timing Indicator	CW 32-36 .020 .17-23 Variable 1-3-4-2 FwH	CW 32-35 .020 17-23 Variable 1-5-3-6-2-4 FwH	CW 32-35 .020 17-23 Variable 1-5-3-6-2-4 FWH	CW 32-35 .020 17-23 Variable 1-5-3-6-2-4 FwH	CW 32-35 17-23 Variable 1-5-3-8-2-4	CW 32-35 .020 17-23 Variable 1-5-3-8-2-4 FwH	CW 32-35 .020 17-23 Variable 1-5-3-8-2-4 Fwid	CW 32-35 .020 .020 17-23 Variable 1-5-3-8-2-4 FwH	CW 32-36 .020 .17-23 Variable 1-5-3-6-2-4 FwH	5.W 32-35 .020 17-23 Variable 1-3-6-2-4 F wH
Valves Seat Angle (Deg.) Infake Infake Anthust Valve Tapet (Searance* (In.) Infake Exhaust Exhaust Chinder Alexance otherwise specified.	30 45 014	014	30 - 014 - 014	30 46 017 .020		30 45 . 017				15 45 . 020 . 024
Maximum Allowable Taper (In.). Maximum Allowable Out of Round (In.). Pistons	001	.000	100.	100.	100.	100	100	.001	100.	100
Piston Top Clearance (In.) Piston Skirt Clearance (In.)	. 002	200	200	900	900	900	900	900	900	800
Ning Cap Clearance No. 1 (In.) Ring Cap Clearance No. 2 (In.) Ring Cap Clearance No. 2 (In.) Ring Cap Clearance No. 4 (In.) Ring Side Clearance No. 4 (In.) Ring Side Clearance No. 4 (In.) Ring Side Clearance No. 7 (In.) Ring Side Clearance No. 2 (In.) Ring Side Clearance No. 2 (In.) Ring Side Clearance No. 2 (In.) Ring Side Clearance No. 4 (In.) Ring Side Clearance No. 4 (In.)	. 017 007 . 017 007 . 017 007 . 0086 003 . 0086 0035 . 0086 0035 . 0086 0035	. 020 010 . 020 010 . 016 008 . 003 001 . 003 001 . 003 001	.017007 .017007 .017007 .018008 .0080038 .00650035 .0045003	. 013 008 . 016 011 . 026 011 . 026 011 . 0245 0025 . 0035 0015 . 0035 0015 . 0035 0015	013 - 008 016 - 011 020 - 010 024 - 025 0035 - 0015 0035 - 0015	. 023 - 013 . 023 - 013 . 023 - 013 . 023 - 013 . 0245 - 003 . 0045 - 003 . 0045 - 003 . 0025 - 001	. 023 - 013 . 022 - 013 . 022 - 013 . 023 - 013 . 0245 - 003 . 0445 - 003 . 0045 - 003 . 0025 - 001	. 020 010 . 020 010 . 020 010 . 020 010 . 0245 003 . 0035 002 . 0035 0015 . 003 0015	. 020 010 . 020 010 . 020 010 . 020 010 . 0046 003 . 0035 003 . 003 0015	. 032 - 022 . 032 - 022 . 032 - 022 . 032 - 022 . 003 - 002 . 004 - 002 . 004 - 002 . 003 - 0015
Crankehaff End Play (In.) Nalan Bearing Journal Djameter (In.) Connecting Red Journal Dlameter (In.)	2.250-2.249 1.9375-1.9365	2.3762-2.3744 2.0627-2.0619	2.3752-2.3744 2.0627-2.0619	. 008 008 2. 624-2. 623 2. 249-2. 248	. 008 005 2. 624-2. 623 2. 249-2. 248	2,874-2,873 2,498-2,498	2.874-2.573 2.499-2.498	2.7485-2.7475 2.7485-2.7475	3.250-3.240	3,750-3,749 3,500-3,499
Capacities Crankcase (Qts.). Cooling System—Engine and Radiator (Qts.) Fuel Taff (Gals.).	-2=	177	8+1 17 16	7+1 33 23	33 23 23	337	37	12+2 40 25	25 H	18+6 80 34
Tensions (Pt. Lbs.) Connecting Red Bearings Main Bearings Cylinder Head Studs Fyvinsel Bolts Manifeld Studs	***** Hitt	:=	:							=
Lubrication A.P. Service Classification A.P. Service Classification Minas 10 Deg. Plus 31 Deg. Plus 30 Deg.	MM BW-20 10W-30 20W 30	MIM 5W-20 10W-30 20W 30	MIM 8W-20 10W-30 20W 30	MIM BW-20 10W-30 30 40	MM BW-20 10W-30 30	MM 5W-20 10W-30 30	5W-20 10W-20 30 40	MAN BW-20 10W-30 30 40	MIM 5W-20 10W-30 30 40	MM 5W-20 10W-30 30 40
ABBREVIATIONS AND RFERENCES CW—Chockwise rotation. FwH—Flywbool Bousing.	NM—Not Meas -4°-20 to 7 70 to 75 100 to 11 1-36°-25 to 4	NM—Not Measurable.	11 1		90 to 100; # 145 to 155. 100 to 110; #	90 to 100; \$4*—130 to 140; \$4*— 145 to 25; \$4*—130 to 140; \$4*— 145 to 25; \$4*—131 to 40; \$4*— 100 to 110; \$4*—145 to 155;		± 4	†† — \$\delta = 15 to 20; \$\delta = 25 to 30; \$\delta = 25 \tag 30;	

## Continental (Diesel)

	1							
Engine Model.	ZD129	GD157	ED201	HD260	JD382	TD427	RD572	SD802
Authorbe of Cytinders Bore and Stroke (In.) Piston Displacement (In.) Oil Pressure (Lb.) Maximum idle Speed	314×374 129 34-2000 15-26 600	34×474 187×474 39-2000 18-25	3%%43% 200 201 48: 5-2000 15-26 600	3.5x875 2.000 74.2400 115.25	4 15 x 8 382 2 87 .4 2000 40 -60	6 427 427 132-2200 40-60	6 44, x3, 5 57-200 55-65 600	6 5-18×51-5 202-1800 202-1800 56-65
Ignition Distributor Rotation—Drive End Fining Order Lecation of Timing Indicator	None 1-3-4-2 FwH	None 1-3-4-2 FwH	None 1-3-4-2 FwH	None 1-3-4-2 FwH	None 1-3-4-2 FwH	None 1-5-3-6-2-4 FwH	None 1-5-3-8-2-4 FwH	None 1-5-3-6-2-4 FwH
Valves Valves Sast Angle (Deg.) Valve State Enhant Valve Tagget Clearance (In.) Enhant Enhant	45 45 .012	45 45 .014	455	45 45 .014	45 45 .014	45 45 . 018	45 45 . 020 . 024	45 45 020 020
Cylinder – Rebore Maximum Allowable Taper (In.) Maximum Allowable Out of Round (In.)	****	****	****	****	****	100.	****	****
Pistons Piston Skirt Clearance (In.)	.002	.004	.004	.004	900	900	700.	900
Rings Ring Cap Clearance No. 1 (In.) Ring Cap Clearance No. 2 (In.) Ring Cap Clearance No. 3 (In.) Ring Cap Clearance No. 3 (In.) Ring Cap Clearance No. 6 (In.) Ring Side Clearance No. 5 (In.) Ring Side Clearance No. 2 (In.) Ring Side Clearance No. 2 (In.) Ring Side Clearance No. 4 (In.) Ring Side Clearance No. 4 (In.) Ring Side Clearance No. 4 (In.)	020 - 010 020 - 010 020 - 010 000 - 0001 0008 - 0001 0008 - 0001	018 - 028 015 - 010 015 - 010 008 - 003 0038 - 002 0038 - 002	0020 - 010 0020 - 010 0018 - 010 0018 - 010 005 - 004 006 - 004 006 - 004 006 - 004		002-013 002-013 002-013 002-010 002-003 004-003 004-003 004-003 004-003	0020-012 018-013 018-013 0020-010 0020-0013 0033-0015 0030-0015	0.025 - 0.03 0.025 - 0.03 0.025 - 0.03 0.025 - 0.03 0.020 - 0.00 0.030 - 0.00 0.030 - 0.00 0.030 - 0.00	032 - 018 032 - 018 032 - 018 032 - 018 032 - 018 033 - 0015 0030 - 0015
Crankshaft Main Play (In.) Main Plasting Journal Dlameter (In.) Connecting Rod Journal Dlameter (In.)	2, 250-2, 499 2, 250-2, 499 2, 250-2, 469	2.376-2.004 2.0625-2.0015	. 008 004 2. 825-2. 624 2. 250-2. 243	2.875-2.874 2.500-2.499	. 008 008 3.250-3.249 2.750-2.748	. 0u8-, 005 2. 878-2. 874 2. 500-2. 439	. 010008 3. 250-3. 249 3. 003-2. 999	3.750-3.749
Capacities Crankcase (Qts.) Cooling System—Engine and Radiator (Qts.) Fuel Tank (Cals.)	128	18	9 2 2	325	266	337	14+4 34	18+8 80 34
Tensions (Ft. Lba.) Connecting Rob Bearings Main Bashings Main Bashings Flywhee Belts Manifold Studs			· · - ! =					
Lubrication A.P. I. Service Classification Plus 10 Deg. Plus 32 Deg. Plus 32 Deg.	DG BW-20 10W-30 10W-30	DG 8W-20 10W-30 10W-30 10W-30	DG 5W-20 10W-30 10W-30 10W-30	DG 5W-20 10W-30 10W-30	DG-20 10W-20 10W-30 10W-30	DG 5W-20 30 W-30 40	DG 5W-20 10W-30 30	DG 5W-20 10W-30 30

ABBREVIATIONS AND REFERENCES CW - Clockwise rotation.

FWH—Frywheel Housing.
NM—Not Measurable.
.—Replace alceves if worn over .008.

"-A" = 30 to 25; 34" = 35 to 40; 34" - 70 to 75; 34" - 70 to 75; 34" - 70 to 75; 34" - 85 to 95; 34" - 90 to 35; 34" - 185 to 185; 34" - 180 to 110; 34" - 130 to 110; 34" - 100 to 110; 34" - 1

### ENGINE SERVICE DATA

olt (.add.	Flywheel B	
	Breaker Ga	700 - 100 -
que	Shark Plug	820 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
(adl	Flod Bolt Jay aupro (Ft.	4.22
03/16/6	Connecting Bearing Cle	0018 0018 0018 0018 0018 0018 0018 0018
beA	Connecting	000000000000000000000000000000000000000
	Main Bearle Clearance	00000000000000000000000000000000000000
		0002 0002 0002 0002 0002 0002 0002 000
ed (Lbe.)	Cylinder He Torque (Ft.	40 40 40 40 40 40 40 40 40 40 40 40 40 4
e luce	Comp.	
Ring Land Clearance		00075 00075 00075 00075 00075 00075 000775 000775 000775 000775 000775 000775 000775 000775 000775 000775 000775 000775 000775 000775
10 Lanc	110	0.0256
Ē		0011 0015 0017 0018 0018 0018 0018 0018 0018 0018
Gap	Comp.	2220
Ring		222222222222222222222222222222222222222
Piston	110	200 - 510   100
	1	26-6-27-27-27-27-27-27-27-27-27-27-27-27-27-
Valve Spring Pressure bsIn. Length	vetuO	42 44 44 44 44 44 44 44 44 44 44 44 44 4
Valve Spring Pressure LbsIn. Length	tenni	34 1 0675 34 1 0675 34 1 0675 34 1 0675 36 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Valve Tappet Clearance	Exhaust	88888888888888888888888888888888888888
	Intake	00000000000000000000000000000000000000
	Valve Seat Angle (Deg.)	00000000000000000000000000000000000000
	Piston Clearance	0.023 0.023
	Oil Pressure, M.9.R 1s	20-1000 28-2-1000
	M.q.R 1s	92-1800 97-1800 113-17-17-17-17-17-17-17-17-17-17-17-17-17-
'W'd	Continuous R.H.s. at H.B	33 - 1800 44 - 1800 44 - 1800 46 - 1800 47 - 1800 48 - 1800 48 - 1800 49 - 1800 49 - 1800 40 - 1800
1	Piston Displacemen (Cu. In.)	11.13.3 11.13.3 11.13.2 11.13.
	Bore and Stroke	
yllnders	Number of C	************************
	MODEL	1348 1348 1348 1349 1349 1349 1340

1			Torque	000000000000000000000000000000000000000
-			Cranksha End Play	002 - 004 002 - 004 002 - 004 003 - 004 003 - 004 003 - 004 003 - 004 005 - 004 005 - 004 005 - 004 005 - 004 005 - 004
-	('97 '3	4) on	ProT flog	25
-	p	oy Bi	Connectin	177 10004 177 10003 177 10003 177 10004 177 10004 177 10004 177 100004 177 100004 177 100004 177 100004 177 100004 177 100004 177 177 177 177 177 177 177 177 177 17
	pour	of gr	Connecting D gainse	003 003 003 003 003 003 003 003
			Main Bea	003-006 003-006 002-003-0048 002-0035 003-0048 003-0048 003-003-0048 003-0048 003-0048 003-0048
	ing Land Clearance	noi	Compress	0015-003 0075-003 004-006 004-006 (1) 004-006 0015-003 0015-003
	Ring Land		110	0016 - 003 00115 - 003 00115 - 003 00115 - 003 0012 - 002 0012 - 002 0013 - 003 0015 - 003 0015 - 003 0015 - 003 0015 - 003
	Piston Ring Gap	wo	Compressi	018 - 022 018 - 022 018 - 022 019 - 022
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	Spring	. Length)	netuO	55 1, 408 55 1, 408 49 1, 2128 55 1, 408 55 1, 408
	Valve	(LbsIn	Jonot	37 1.281 34 1.0878 34 1.0878 34 1.0878 34 1.0878 37 1.281 37 1.281 37 1.281 37 1.281 37 1.281 37 1.281
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		rpar enq	Cylinder H Torque Ft.	158 158 158 158 158 158 158 158
		egus;	Piston Clea or Feeler C and Los. P	006 2-4 006 3-6 006 007 008 007 008 007 005 2-4 005 2-4 005 3-5 005 3-6 005 3-6 005 3-6 005 3-7 005 3-
		0.	inesera (iO .M.q.A ts	30-1200 38-1200 38-1000 38-2000 38-2000 38-2000 38-2000 38-2000 38-2000 38-2000 38-2000 38-2000 38-2000 38-2000
	91	Torqu	mumixsM .M.q.A 1s	96 1500 136 1500 142 1400 142 1400 156 1500 163 1400 178 1500 178 1500 205 1500 202 1800 202 1800 202 1800 203 1500
COCI		ш	Compressio Ratio	15.50 15.50 15.50 15.50 15.50 15.50
2	1	M.9.	Continuous B.H.P. at F	38. 5.2200 48. 3.1800 53. 2.1800 55. 5.1800 66. 5.1800 67. 5.2200 69. 5.1800 69. 5.1800 69. 5.1800 69. 5.1800 69. 5.1800 69. 5.1800 69. 5.1800 69. 5.1800 69. 5.1800 69. 5.1800
_		Įu	Piston Displaceme (Ca. In.)	133 1133 1198 1198 1198 1198 1198 1198 1
Calles			Bore and Stroke (In.)	
3	ersb	Cylin	Number of	444444440000000
E		SHOWS	MODEL	IB 11D 11D 11D 11D 11D 11D 11D 11D 11D 11

80 - 2002 - 0003 - 004 | 175 | -002 - 004 | 005 - 004 | 005 - 004 | 005 - 004 | 005 - 004 | 005 - 004 | 005 - 004 | 005 - 004 | 005 - 004 | 005 - 004 | 005 - 004 | 005 - 004 | 005 - 004 | 005 - 004 | 005 - 004 | 005 - 004 | 005 - 004 | 005 - 004 | 005 - 004 | 005 - 005 - 004 | 005 - 005 - 005 - 005 - 005 | 005 - 005 - 005 - 005 - 005 | 005 - 005

### ENGINE SERVICE DATA

		Super 44	3.1875 4.3750 140.0 25.5-1800	-5	DC.			006 0025 . 0035 016 . 017		11111111	:		
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176 225 225 225 225 225 175 175 175 263 263 263 263 263 263 263 263	Cold.	Σ						29					
004 0055 0055 0055 0004 0004 00045 00045 00045	0	995 GM	3 4.2500 5.0000 213.0 90-1800	13-2	-	0 80		018 008 . 022 040		165 175 65 75 180 190 30 35 150 160		10W 20W 30	
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003- 0045- 0045- 0045- 0005- 0005- 0005- 0005- 0005- 0005- 0005- 0005- 0005- 0005- 0005- 0005- 0005- 0005- 0005- 0005-		990 GM	3 4.2500 5.0000 213.0 87-1800	1-3-2		600		018 008 .022		165 175 68 75 180 190 30 36 150 160		10W 20W 30	
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0025 0025 0025 0025 0015 0015 0015 0015	op-0	Š	98.5	2		45 016 016		885		272	27	10W 10W 20W	
8 .022 9 .020 9 .022 9 .022 - 022 - 022	(3)—1			<b>A</b>									center
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9000													BTDC Before top dead
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37-1,281 74-10,675 74-10,675 74-10,675 30-1,355 30-1,358 30-1,358 57-20	100	950	4.00 4.00 302. 74.1	1-5-3	8 BTDC	45 45 008		.005		83 85 75 27 27 86 86 34	. 22	10W 20W	
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006-3-6 006-3-6 006-3-6 0116-0136 017-2-136 007-12-15 007-12-16 008-10-13 008-10-13 008-10-13 008-10-13 008-10-13 008-10-13 008-10-13 008-10-13		770	8 3.50 3.75 216.0 58°	025		45 45 45 009 011 015 01 0025 0	900	9000 9000 9000 9000 9000 9000 9000	300* 11005 365* 455*	92 10 87 92 28 27 28 27 86 68 12 15	181	5W 10W 20	10.0
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	045.	Super 66 HC,	3.75	1-2-4-3		45 45 .009 .01 .0015 .01 .0025 .00	.046	013 0005 0005 0045 0045 010	300* 120* 365* 455*	92 100°3 46 50 87 92 25 27 66 69 34 12 15	14		
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	(1)—Top—.0	550 HC, D				45 45 .009 .011 .015 .0172 .0015 .0035 .0025 .0045	090	.0015 .0035 .0035		2			3 Diesel models, 112-117
8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	8	550	3.50 3.75 144.0	1-2-4-3 025 020		45 45 009 0015 0025 48 @ 1	.046 .060	013 0005 0005 0045 0010	3004 1205 3654 4554	92-1003 46-50 87-92 25-27 66-99 34	34	5 W 10 W	read In
79-1800 81-1800 107-1800 112-1800 116-1800 113-1800 114-1800 118-1800 118-1800 118-1800 118-1800 118-1800 118-1800 118-1800 118-1800													00
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	ABBREVIATIONS	Olive	No. of Cylinders Bore (In.) Stroke (In.) Piston Displacement (Cu. In.) Horsepower at RPM	Firing Order Spark Plug Gap (In.) Breaker Point Gap (In.)	iming k Occur	at Angli arance arance m Clea m Clea	at Ins	sistens, Mangs, Chindren, In., Comp., In., Rad Barring Cleanore In., Rad Barring Cleanore In., Crarkshiff End Play In., Crarkshiff End Play In., Pilysten Ring Gao In., Charles Ring Castance In.	Lompresson Pressures LD. 100 RPM 200 RPM 600 RPM	que Values Fr. Lb. Cylinder Head Connecting Rods Main Bearings Manfold Flywheel Saark Plugs	arities Engine Oil (Qts.) Cooling System (Qts.) Transmission (Qts.)	Lubrication A.P.1. Service Classification Minus 10 Deg. Plus 10 Deg. Plus 32 Deg.	1 Includes differential.
DJXH-F DD-339 DW-3CD DW-3CD DW-3CD DW-3CD DB-3CD DR-3CD DR-3CD DR-3CD DF	AB	Oliv Engine Model	No. of Cylinders Bore (In.) Stroke (In.) Piston Displacen Horsepower at R	ark Plu	Spar	Ive Sei Ive Sei Ive Cle Ive Ste Ive Ste	lve Sea	, Ring ng End ng End d Bear aln Bea anksha ng to G	BPW BPW BPW BPW	Torque Values (F Cylinder Hea Connecting F Main Bearing Manffold Flywheel Spark Plugs	dies ogine O oling S ansmis.	inus 10 us 10 C	udes d
DIXH-F DD-339 DWXD DWXLD- DWXLD- DWXLD- DRXC- DFXB DFXB DFXB DFXB DFXB DFXB DFXB DFXB		Onigin	lore (laston lorsep	Spirition Spirition	6	Valvas Valvas Valvas	Va	A SECOND	00 12 10 10 10 10 10 10 10 10 10 10 10 10 10	POSENCE I	Appart Co Tr	M Ph	Inc

## 3 International-Harvester-Gasoline

	00 011		000 11							
Engine Model.	00-20	0-123	0-220	D-264-6	N-281	0-308	U-372	UV-401	N-450	UV-461
Number of Cylinders	9	*	9	9	*	9	9	10		100
Bore (In.)	2,6250	3,1250	3,5625	3,6875	4,1250	3.8125	4.3750	4,1250	4.3750	4.1250
Strake (In.)	2.7500	4.0300	3.6875	4,1230	5.2300	4.5000	4.1250	3.7500	8.0000	4.3126
Displacement (Cu. In.)	58.5	122.7	220.5	284.0	281.0	308.2	372.1	401.0	451.0	461.0
Governed Speed at Full Load (RPM)	2500	2000	1800	2400	1800	2430	1800	2800	1800	2000
Compression Ratio	7.00	6.80	7.10	7.00	6.60	6.57	6.50	7.69	6.50	7.20
Compression Pressure at 1000 RPM	165	165	***************************************	165		*******	.,,,,,,,,,	200	**********	150
Crankshaff Maximum Main Bearing Clearance (In.) Maximum End Clearance (In.)	.010	.0039	.010	.0041		.0043	.0043	.00944	.015	.0004
Connecting Rods Side Clearance (In.) Maximum Bearing Running Clearance (In.)	.0030	.003014	.0032	.0041		.013	.0037	.010.018	.0037	.0042
Pistons Ring Chearance in Groove Top Compression (In.) Second Compression (In.) Third Compression (In.) Oil Control (In.)	.0020 .0038 .0020 .0036	. 0030 - 0048 . 0015 - 0030 . 0015 - 0030	. 0025 - 0040 . 0015 0030 . 0020 0040	. 0035 - 0050 . 0020 - 0035 . 0020 - 0035 . 0015 - 0030		. 0025 0040 . 0015 0030 . 0015 0030	.0040 - 0055 .0020 - 0035 .0020 - 0035 .0015 - 0035	.0035 .0050 .0035 .0050	. 0020 - 0058 . 0020 - 0038 . 0020 - 0038 . 0015 - 0035	.0035 .0050
Piston Rings Ring Gap Compression) Top (In.) Second (In.) Third (In.) Maximum Ring Gap (In.) Maximum Ring Gap (In.)	.007017	.010 .020 .010 .020 .020	.018028 .016028 .0328	.013 .023 .013 .023 .013 .023		920	, 025 - 035 , 025 - 035 , 035 , 035	.013 .025	. 028 038 . 028 038 . 038 . 038	.013028
Intake Valves Stem Clearance in Guide (In.) Maximum Stem Clearance in Guide (In.) Valve Face Angle (Deg.) Valve Sant Angle (Deg.) Tappet Clearance Tappet (In.)	.001003 .003 45 45	.00160035 .0035 .45 .014 .014	. 0015 0040 . 0040 30 30 . 026 . 033	.002 .004 .004 .007 .017		.00150035 .0035 15 .020022	. 0015 . 0040 . 0040 15 15 . 018 . 020	. 0015 0040 . 0040 45 45 Hydraulic	. 0015 0040 . 0040 . 15 15 15 . 018 020 . 023	. 0015 0040 . 0040 45 45 45 Hydraulic
Exhaust Valvee Stem Clearance in Guide (In.) Maximum Stem Clearance in Guide (In.) Valve Exer Clearance Tapet Clearance Tapet Clearance Cold (In.)	. 0005 . 0035 . 0035 45 45	.0015 .0035 45 45 45 .014	.0020 .0045 .0045 .30 .30 .025 .025	.002 .004 .004 .005 .017		.002 .004	. 0020-, 0045 . 0045 44 45 . 018-, 020	.00280050 .005 .45 45 Hydraulic	. 0020 0045 . 0045 . 0045 . 44 . 45 . 018 020 . 013	.00250050 .005 45 45 45 Hydraulic
Intake Valve Opens-Deg. Before TDC:	10	15	10	10	un.	12	16	22	16	22
Crankcase Refill Capacity (Qts.)	69	10	60	60	**********	7		10		10
Nut and Bolt Torque Data (Ft. Lb.) Cylindor Head Stud Muts Connecting Rod Nuts or Cap Serews Main Bearing Stud Nuts Flywheel Bolts Manifold Stud Nuts	45.20 16.20 55.60 20.25 20.25	70-75 40-45 75-80 65-68 50-55	85-95 45-85 75-86 55-65 25-30	110 - 115 55 - 60 100 - 105 65 - 68 80 - 55		100 110 60 70 90 100 25 30	75.85 100-110 150-160 25.30	80-90 65-70 100-110 90-100	100-110 75-85 100-110 150-160 25-30	80.90 65.70 100-110 90-100

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International-H	Jarve	arvester—	-Gasoline	line	and	Diesel			
Engine Model	U-501	UV-549	U-1091	UD-281	UD-350	UD-14A	UD-525	UD-18A	UD-1091
Number of Cylinders	10	100	9	4	¥		10	9	10
Bore (In.)	4.5000	4.5000	5,7500	4,1250	4.5000	4,7500	4,5000	4.7500	8,7500
Stroke (In.)	5,2500	4.3125	7.0000	5.2500	5.5000	6,5000	5.5000	6.5000	7,0000
Displacement (Cu. In.)	501.0	548.7	1091.6	280.6	349.9	460.7	524.9	1,169	1090.6
Governed Speed at Full Load (RPM)	2600	2600	1400	1800	1800	1400	1800	1600	1400
Compression Ratio	6.50	7.06	7.50	16.50	15.61	15.00	16.00	15.50	15.00
Compression Pressure at 1000 RPM	*******	140		556 614	503 557	513-567	503 557	513 567	484-536
Crankshaff Maximum Journal Out-of-Roundness (In.) Maximum Bearing Clearance (In.) Maximum End Clearance (In.)	009		. 6074	024	.004	,004	.009	.004	.010
Connecting Rods Side Clearance (In.) Maximum Bearing Running Clearance (In.)	.007013	.010 .018	.009 .015	.009 .015	.009 .015	\$10, 900,	.009015	.009 .015	.008015
Pistons Ring Clearance in Grove Top Compression (In.) Second Compression (In.) That Compression (In.) Fourth Cempression (In.) Oil Contrel (In.)	, 0040 , 0055 , 0030 , 0045 , 0015 , 0035	. 0035 . 0050 . 0035 . 0050 . 0036 . 0050	. 0130 . 0030 . 0045 . 0026 . 0046	.0040 .0058 .0030 .0050 .0028 .0048	. 0035 . 0050 . 0025 . 0040 . 0029 . 0035 . 0025 . 0040	. 0040 - 0065 . 0030 - 0160 . 0028 - 0045 . 0028 - 0045	. 0035 . 0050 . 0025 . 0040 . 0020 . 0035 . 0026 . 0040	. 0040 - 0055 . 0030 - 0050 . 0028 - 0045 . 0025 - 0045	. 0040 - 0056 . 0030 - 0045 . 0030 - 0040 . 0025 - 0040
Piston Rings Ring Gas Congression) Tap (In.) Ther (In.) Third (In.) Fourth (In.) Maximum Ring dap (In.) Ring Gas (Oil) Ring Gas (Oil)	.020 .030	.013 .028 .013 .026 .013 .025	.020 - 040 .024 - 029 .024 - 028 .040	.012 .028 .012 .028 .012 .028 .070 .020	. 013 - 029 . 013 - 029 . 013 - 029 . 013 - 029	. 014-030 . 014-030 . 014-030 . 018-030 . 020-036	. 014 - 030 . 014 - 030 . 014 - 030 . 013 - 029 . 060	. 014 - 030 . 014 - 030 . 014 - 030 . 070 . 070 . 020 - 036	.030 .046 .019 .035 .019 .035 .070 .019 .041
Intake Vahes Seem Clearance in Guide (In.) Maximum Stem Clearance in Guide (In.) Valve Face Angle (Deg.) Valve Face Angle (Deg.) Tappe Clearance Helt (In.) Cold (In.)	. 0015 . 0040 . 004 13 . ©30 . 022	. 0015 . 0040 . 004 45 45 45 Mydraulic	. 002 - 004 . 004 45 45 45 45 45	. 002 . 004 . 068 . 45 . 017	.002 .004 45 45 45	. 002004 008 45 45 018	. 002~. 004 . 008 45 45 45 . 017	. 002 004 . 008 . 45 45 . 018	, 002-, 004 , 008 45 45 , 023
Exhaust Valves Sem Clearance in Guide (In.) Maximum Stem Clearance in Guide (In.) Valve Face Angle (Deg.) Valve Seat Angle (Deg.) Taped Clearance Hot (In.)	. 0020 . 0045 . 0045 45 . 020 . 022	. 0625 . 0050 . 005 45 45 45 Hydraulic	.002 .004 .004 4.5 4.5 4.5 .017	. 002 . 004 45 45 . 017	. 002 . 004 . 008 45 45 45 . 017	. 003	. 002 004 . 008 45 45 . 017	. 003 006 . 008 . 45 . 45 . 018	.003006 .008 .45 45 .023
Intake Valve Opens-Deg, Before TDC	91	22	30	10	10	20	92	92	20
Crankcase Refill Capacity (Qts.)		10	30	0	11	16	2	38	30
Nut and Bolt Torque Data (Ft. Lb.) Cylinder Head Stud Nuts Connecting Rod Nuts or Cap Screws Main Bearing Stud Nuts or Cap Screws	75 85 75 85	80 80 65-75	250 270	115-135	145-165 55-60	215 235 70 75	145-146 55-80	215-235	290-310
8, Inch		100-110	250 275	150-175	150-175	250 275	110-138	250-275	250 273
Fiywheel Botts Manifold Stud Nuts Front Pulley Nut to Crankshaft	150 110 150 160 25 30	90-100	150-155 75-80	65-68 50-55 325-375	65 68 75-80 325-375	75-155 75-80 325-375	110-135 75-80 325-375	150 155 75 80 325-375	150 155 75 80 325 375
Camshaft Gear Nut	110 120	125 150		225-250	225 250	225-250	275-300	225-250	275 300

E	IGIN	IE SER	RAICE	DATA								
REFERENCES 125-3000.	990. (B, G2B, 3000. 316. 224.	220. 0093. 00045. 2200. 2200. 2200. 2200.	18—140(2)KB, 426-800, 140(KB) for fire appearatus, 466-1000. 18—140(KB, 62KB, 52900. 18—140(KB, 62KB, 52900. 18—140(XB, 188-8500; 140(ZB) for fire appearatus, 226-8260; 140(ZB) for fire 19—140(ZB) for fire appearatus, 490-	1800–1450K for five apparatus and 1450KK, 240–2400; 1455KB for five apparatus, 240–2400. 22–4450KB for five apparatus, 540– 1860K, for five apparatus and 1450KB, 2400.	24. 146.7 KB, G.2B, G.92.0 24. 146.7 KB, 2004. 25. 146.7 KB, 2025. C0040. 26. 146.7 KB, 2025. C0040. 27. 146.7 KB, 265. 2400. 28. 146.7 KB, 265. 2400. 30. 190.1 CA, 56. 2400.	9DLCA, 139DKD, 2800. 2800. 1700. -009. 35DKBS, 185-	2800. 28—135DKBS, 400-1800. 29—145DKB, 200-2100; 145DKBS, 280-2100.	(KBS, 2100. KKBS, 1028. 258-1800; WAKDBS, 845-1000; WAKDBS,	Appers, appers,	135 GK, GKB	6 250 5,000 426,0 134-240010 376-120011	45 48 .00150035 .00150035 .010012
REFE 1-195GKA, 125-3	2 1950 KA, 263-1 3 1956 KA, 13501 4 1956 KA, 014- 5 1950 KA, 022- 6 1956 KA, 019-	7 1956. KA , 015, 502, 8 1856. KA , 0005-0030. 9 1856. KA , 0005-0045. 10 1356. KB 145-2000. 12 1856. KB 337-1200. 12 1856. 354-1200. 14 1496. KB 177-2000: 1406. KB 16	15_1400KB, \$26-4 apparatus, \$4 16_1406KB, \$32B, 17_1406KB, \$62B, 18_1406KB, \$62B, 18_1406KB, \$62B, 18_1406KB, \$62B, 18_1406KB, \$62B, 18_1406KB, \$62B, 18_1406KB, \$62B,	20—145GK for 1445GKB, 24 fire apparatu 21—145GKB for 1000. 22—145GK for 145GKB, 24	23 145GKB (GZB 24-145GKB, 0045 27-145GKB, 0055 27-145GZB 268-2 28-145GZB 268-2 28-6WAKB, 290-1 30 6WAKB, 290-1 31 190DLCA, 88-	24 190 DLS, 2500 24 195 DLCA, 98- 34 197 DLCS, 131- 35 197 DLCS, 137- 36 197 DLCS, 1007- 37 135 DKB, 147-5	2800. 38—135DKBS, 400 39—148DKB, 200-3	40 145DKBS, 706-1800, 42 145DKB, DKBS, 2100, 42 145DKB, DKBS, 028, 43 WAKDB, 258-1800; 400-1800, 44 WAKDB, 845-1000;	48,016 with roller type tappets	6 MZA	6 4.250 4.750 404.0 130-3000 288-1000 3000	45 45 . 001003 . 002004 . 008 010
	WAKD. WAKDB.	6 . 250 6 . 250 1197 . 0 224-160043 840-100044 160043	30 45 .00150035 .00250045 .01446	.045 - 050 .035 - 048 .035 - 040 .027 - 032	. 039 045 . 030 046 . 030 046 . 026 046 . 020 030	.00150035	.0020 .0045	. 040 . 040 . 0025 . 0060 . 005 . 013		195 GK, GKA	6 4.125 4.000 320.0 103-24001 241-14002 24003	45 45 .0015 .0035 .0026 .0046 .007 .0094 .UZI .0238
	148 DK. DKB. DKBS	6.250 6.000 779 197.200039 548.100040	45 45 .0015 .0035 .0015 .0035	.042 .043 .027 .039 .027 .039 .021 .023	.035 .045 .020 .030 .020 .030 .020 .030 .020 .030 .015 .025	.00150035	.00150040	.040 .040 .0020 .0047 .005 .013		195 GL	6 4.000 302.00 382.0 85-2400 240-1200 2400	45 46 . 0015 0035 . 007 004 . 021 023
	135 DK, DKB, DKBS	6 4.250 5.000 426.0 140.24037 328.160038 240033	45 45 .0015 .0035 .011 .0035	030 038 030 036 019 025 019 025	. 015 . 025 . 015 . 025 . 015 . 025	0015 0035	,0010-,0035	.040 .040 .00150045		190 GLB	6 3.750 4.000 265.0 77-2400 223.1200 2400	45 45 . 0015 0035 . 007 0045 . 021 023
	197 DLC, DLCS	6 4,000 302,0 91,280034 216-160035 2800	45 45 .00150035 .00250045 .00901136	.0290 .0255 .0230 .0265 .0230 .0265 .0230 .0265	.015 .025 .015 .025 .015 .025	.0008 .0028	.00050030	.040 .040 .00150045		185 GLB	6 3.500 3.750 216.0 67.2400 176.1400 2400	45 45 .0015 .0035 .0025 .0045 .009 .011
	195 DLC, DLCA	6 4.000 36.200 36.24033 221-1800 240033	45 45 .00160036 .00260045 .010	.019 .021 .019 .021 .019 .021	. 015 . 025 . 015 . 025 . 018 . 025 . 010 . 020	.00100035	,0015-,0030	. 040 . 040 . 0015 0045 . 0045 0085		ХАН	4 5.625 4.500 18.0 47.2200 131.1400 2200	45 45 . 0015 0035 . 002 004 . 009 011
	190 DLC, DLCA	6 3.750 3.750 265.00 284.240031 191-1400 240032	45 48 .0015 .0035 .0025 .0045 .010	.029 .033 .023 .026 .023 .026 .023 .026	.015 .025 .015 .025 .016 .018	.001.003	.0005 .0030	.040 .040 .0015 .0045 .0045 .0085		180 GLB	4 5.500 3.500 14.0 45.2400 118.1600 2400	45 48 . 0015 0035 . 0025 0046 . 009 011
	185 DLC	6 3.500 2750 216.0 00-2400 152-1000 2400	45 45 .00150035 .00250045 .010	.029031 .029031 .023026 .023026	.014 .024 .014 .024 .014 .024 .007 .017	.001 .003	.0005 .0015	. 040 . 040 . 0020 . 0032 . 0045 . 0085	line	FC	4 3.250 4.000 133.0 35.2400 97-1400 2800	45 45 .001003 .002004 .005007
iosoi	180 DLC	4 500 3,750 144.0 45-2400 102-1800 2400	45 .00150035 .00250045 .010	.029031 .029031 .023026 .023026	. 014 - 024 . 014 024 . 014 024 . 007 017	.001003	.00060015	. 040 . 040 . 0020 0032 . 0045 0085	asoli	ICK	4 2.500 2.125 61.0 18-3000 41-1800 3200	45 45 .001003 .002004 .007009
Wankesha_Diese	Engine Model	Number of Cylinders. Spree (In.) Stroke (In.) Displacement (Cu. In.) Displacement (Cu. In.) Maximum Torque at RPM Fr. Lb.) Maximum Permissible Speed (RPM)	Valves Seat Angle (Intake) (Deg.) Seat Angle (Exhaust) (Deg.) Sem Observation in Guides (Intake) (In.) Stem Observation in Guides (Exhaust) (In.) Operating Disament (Intake) (In.) (Deld) Operating Disamente (Exhaust) (In. (Deld)	Pistons (Aluminum) Land (Cearance with Bore (In.) Top Second Third Third Fourth Skirt Glearance (In.)	Rings Gap (In.) Top. Second Fourth Fourth Fifth Fifth Group Clearance (In.)	Top Second Third Fourth Fifth Sixth	Rods and Bearings Connecting Red Clearance (In.) Side Clearance (In.)	Maximum Permissible Undersize Main Journals (In.) Connecting Red Journals (In.) Main Bearing Clearance (In.) Crankshaft End Play (In.)	Waukesha—Gaso	Engine Model	Number of Cylinders Strake (In.) Strake (In.) Displacement (Cu. In.) Displacement To The Strake Maximum Torque at RPM (Fir. Lb.) Maximum Permissible Speed (RPM)	Valves Seat Angle (Intake) (Deg.) Sent Angle (Exhaust) (Deg.) Sent Angle (Exhaust) (Deg.) Stem Clearance in Guides (Intake) (In.) Stem Clearance in Guides (Exhaust) (In.) Operating Clearance (Intake) (In.) (Cold) Operating Clearance (Exhaust) (In.) (Cold)

### ENGINE SERVICE DATA

. 030 - 034 . 030 - 034 . 019 - 023 . 019 - 023	. 015 - 025 . 026 . 030 . 015 . 025 . 030 . 0020 . 0030 . 0015 . 0030 . 0015 . 0030 . 0016 . 0038	. 0010 0035 . 008 014 . 040 . 040 . 0015 008	H-844 8 250 4 875 844.0 400	CCW 1018 1706 11-6-7-3-6-5-4-2 1707 11-6-7-3-6-5-4-2 1013 1013 1013 1013 1013 1013 1013 101	.00150035 .004008 .004008 3.748 3.748 3.748 3.748 .002005 .002005 .002005 .003005 .005 .005 .005 .005 .005 .005 .005
.03000355 .02400295 .02000255 .02000255	. 013 - 023 . 013 - 023 . 013 - 023 . 015 - 0030 . 0016 - 0030 . 0010 - 0025 . 0010 - 0025	. 001 003 . 003 010 . 040 . 040 . 0015 0035	H-540 8 8 4.500 4.250 540.0 170-2400 400	CCW 11-6-7-3-6-5-4-2 11-8-7-3-6-5-4-2 15-7-3-6-5-4-2 15-7-3-6-5-4-2 15-7-3-6-5-4-2 1013 1013 1013 1013 1013 1013 1013 101	(fn.) 2,348,3,249 3,348,3,249 3,348,3,249 3,348,3,249 3,011,0034 86 16 16 16 16 17 16 17 16 16 16 17 16 16 16 17 16 16 16 17 16 16 17 16 16 17 16 17 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18
.016 .0216 .010 .0156 .010 .0157 .0035	. 013 . 023 . 013 . 023 . 013 . 023 . 023 . 0020 . 0035 . 0030 . 0015 . 0030 . 0005 . 0030 . 0005 . 0030 . 0030 . 0030 . 0030	.000500154 .008014 .040 .040 .00450030*	(Formerly	ficator aper (In.) but of Round (in.)	rumet sarar
. 016 - 022 . 003 - 016 . 009 - 016 . 009 - 008	013 - 023 - 013 - 023 - 013 - 023 - 0005 - 0000 - 0010 - 0010 - 0010 - 0010 - 0015 - 0	.0005 - 0018 .038 - 014 .040 .040 .0005 - 0030	Roiline Engine Model Engine Model Mumber of Cylinders Bore (In) Displacement (Cu. In) Displacement (Cu. In) Olypscapers at RPM Olypscapers at RPM Minimum idle Speed (RPM)	Ignition Distributor Rotation Distributor (Tab.) Stark Occurs (Deg.) Firing Order Location of Timing Indicator Seat Angle (Deg.) Tappet Clearance (In.) Maximum Allowable Taper (In.) Maximum Allowable Out of Round Rings Skirt Clearance (In.) Side Gaga Clearance (In.) Side Clearance (In.) Side Clearance (In.) Side Clearance (In.)	Crenteshaft Ross. 2, 3 and 4  End Plays (Int.) Malia Bearing Journal Diameter (Int.) Forming Bearing Desarrore Int.) Connecting Rod Bearing Clearance (Int.) Connecting Rod Bearings Connecting Rod Bearings Forming Pystem (Qt.) Connecting Rod Bearings Forming Pystem (Qt.) Forming Pystem (Qt.) Connecting Rod Bearings Forming Hough Sharing Bearings Forming Hough Sharing Bearings Forming Hough Forming Ho
, 0210 - 0235 , 0160 - 0215 , 0160 - 0215 , 0160 - 0215	. 015 - 023 . 015 - 023 . 015 - 023 . 015 - 023 . 015 - 030 . 0015 - 003	. 0035 0015 . 008 014 . 040 . 010 . 0005 0035 . 0045 0085	m ZBWGIOZ		Crart 18 5 6 aps 17 6 m 10 0 CCV
.0295 .0295 .0255	020 020 023 023 017 017 0030 0030	. 0015 . 0030 . 0085	6 WAK. WAKB. 6.250 6.500 1197.0 234-180028	30 46 0015 - 00 0035 - 00 013 - 015 022 - 024 028 - 034 029 - 034	2045 - 680 2020 - 680
.0240 .0240 .0200 .0200 .0015	010 010 013 007 0015 0015	. 0008 . 040 . 040 . 0005	145 GZ, GZB 6 5.375 6.000 817.0 250.2400 <sup>27</sup> 250.2400 <sup>27</sup> 250.2400 <sup>27</sup>	30 30 30 30 30 30 30 30 30 30	030 - 040 030 - 040 020 - 030 020 - 030 00045 - 0060 0015 - 0040 0010 - 016 0040 - 0040 0040 - 0040 0040 - 0040 0040 - 0040
.0120 .0185 .0120 .0185 .0120 .0185 .0020 .0185	.037 .017 .037 .017 .037 .017 .0019 .0017 .0016 .0026 .0010 .0026	.001003 .005010 .040 .040 .001.003	GKB GK, 15 GKB G G G G G G G G G G G G G G G G G G G		0.00 0.000 0
.0240 .0295 .0240 .0295 .0200 .0255 .0200 .0255	.010 .020 .010 .020 .013 .023 .007 .017 .0015 .0030	,0005 ,0015 ,008 ,014 ,040 ,040 ,0005 ,0030	GZB GZB 4 625 5.500 170 225018 170 225018		0.30
. 0210 . 0265 . 0150 . 0205 . 0150 . 0205 . 0150 . 0205 . 003	.010 .015 .015 .010 .015 .010 .015 .010 .018 .0030 .0030 .0035 .0010 .0025 .0010 .0025	.0005 .0030 .0075 .0125 .040 .040 .0005 .0025	KB KB GK, 8000000000000000000000000000000000000		0.030 - 0.40 0.030 - 0.40 0.15 - 0.05 0.15 - 0.03 0.01 - 0.03 0.01 - 0.03 0.01 - 0.03 0.01 - 0.03 0.01 - 0.03 0.02 - 0.04 0.05 - 0.04
.0150 .0185 .0110 .0145 .0060 .0085	. 007 . 015 . 007 . 015 . 007 . 015 . 0018 . 0030 . 0010 . 0025 . 0010 . 0025	. 001 002 . 010 012 Ball Bearings . 040 Ball Bearings Ball Bearings	135 GZ, 14 GZB	45 45 4015 - 0035 4015 - 0035 4016 - 012 4025 - 029 4025 - 029 4021 - 025 4021 - 025 4021 - 029 4021 - 029 4021 - 029 4021 - 029 4021 - 029 4021 - 029	015, 025 013, 023 013, 018 0015, 003 0015, 003 0016, 0035 0010, 0035 0010, 0035 0010, 0035 0010, 0035 0010, 0035 0010, 0035
Pistons (Aluminum) Land Clearance with Bore (In.) Second Third Fourth Skirt Clearance (In.)	Rings Gap Vin.) Second Thirt Found To Found To Second To Second The Found The Found The Found Found	Rods and Bearings Connecting Rod Clearance (In.) Side Clearance In. Maximum Permissible Undersize Main Journals (In.) Connecting Red Journals (In.) Main Bearing Clearance (In.) Crankshaft End Play (In.)	Waukeshamber of Cylinders Branch Gas (Barber (In.) Cylinders Cylinders Christian (Carlot (In.) Cylinders (Ca. In.) Cylinders (	Maximum Perimissione Speed Invited Seat Angle (Entake) (Deg.) Seat Angle (Entake) (Deg.) Stem Clearance in Guides (Inc.) Stem Clearance in Guides (Exhaust Inc.) Operating Clearance (Exhaust Inc.) Land Clearance (Exhaust Inc.) Second Therd Second Therd Fourth Skirt Clearance (In.)	Gap 16.)  Gap 16.)  Second Find Fourth Corose Clearances (In.)  Second Third Fourth Fifth Reds and Bearings Connecting Bod Contracts (In.)  Side Clearance (In.)  Side Clearance (In.)  Maximum Permissible Undersite Mania Journals (In.)  Mania Bearing Red Journals (In.)  Connecting Red Journals (In.)  Main Bearing Clearance (In.)  Connecting Red Journals (In.)  Main Bearing Clearance (In.)  Connecting Red Journals (In.)

.021-.023

.021-.023

.019-.021

Engine Model	JG239	JH256	272	HD272	292	312	JB317	L332	401	477	234
Bore (In.).	3.5000	3,6200	3.6200	3.6200	3.7500	3.8000	3.8000	3.8000	4,1200	4.5000	4.5000
Stroke (In.)	3.1000	3.1000	3.3000	3,3000	3,3000	3.4400	3.5000	3.6600	3.7500	3,7500	4.2000
Piston Displacement (Cu. In.)	238.0	256.0	272.0	272.0	292.0	312.0	317.0	332.0	401.0	477.0	534.0
Torque at RPM (Ft. Lb.)	215-1900	228 2000	250-2300	263 2500	268-2400	287-2400	289-2000	306-20004	********		
Idle Speed (RPM)	475-500	475-500	475-500	475-500	475 500	475-500	475 500	475 500	********	********	
Compression Ratio	7.30	7.50	8.30	7.80	8.00	8.00	7.20	7.60	7.50	7.50	7.50
Initial Timing (Deg.) Initial Timing (Deg.) Maximum Advance (Deg.) Distributor Breaker Cam Breaker Contacts. Breaker Contacts.	10 BTDC	10 BTDC	10 BTDC	10 BTDC	4 BTDC	10 BTDC	10 BTDC	4 BTDC	4 BTDC	4 BTDC	4 BTDC
Spark Plugs Stree (Mm.) Gap (In.)	18	18	18	.028 .032	18 .028 .032	18	18 .025 .0291	18	18 .G78 .032	18 .028032	18 .028032
Valves Valve Stem to Guide Clearance (in.) Valve Stem to Guide Clearance (Exhaust) Valve Stem for Guide Clearance (Exhaust) Valve Saat Multin (Intake) Valve Saat Width (Intake) Valve Saat Width (Intake) Valve Saat Width (Intake) Hot Tappet Clearance (Exhaust) Valve Sast Interference Anje (De) Valve Sast Interference Anje (De) Valve Spring Tension (Grean (In.)	001-002 002-003 45 070 080 080 016 016 018 84 62 174-140	.001002 .002003 45 .070 .0020 .016 .018 .018 .018 .124-140	.004 .005 45 .0026 .0028 .0028 .018 .018	.005 43 43 070 .002 .002 .018 .018 .71 .77 (6.1.39 71 .78	, 004 , 005 , 45 , 070 , 080 , 019 , 019 , 019 , 71 79 (6.1, 39	, 004 45 45 070 080 0035 019 019 161 177 (6.1.39	002003 45 46 070 070 0020 009 009 021 161-177 (6.1.39 71-79 (6.1.78	. 0004 . 0005 . 0070 . 00025 . 0127 . 0127 . 077 (6. 1.39 71-79 (6. 1.70		.001002 46 100106 .100115 .002106 .002002 .020 .020 .020 .020 .020 .020	.001002 .00180032 45 .008105 .002 .020 .020 .78 - 102(cf. 1.28 84 - 69(g. 1.70
Cylinders Maximum Cylinder Bore Taper (In.) Maximum Cylinder Bore Out of Round	.0000	0000.	0800	0900	. 0080	. 0080	0000	0000	900	900	900.
Crankshaft End Play (In.) Connecting Rod Side Clearance Flywheel Runoul (In.)	.002006	.002 .006	010	010	010	.010	.004008	.012	010	.012 .019	.012 .019
Pistons and Rings Piston Pin Clearance in Piston Side Clearance – Top Ring (In.) Ring Cap (In.) Ring (In.)	.00010003 .00200035 .00200035 .00150030	. 0001 - 0003 . 0020 - 0035 . 0016 - 0030 . 0116 - 027	,0006 ,0060 ,0060 ,010 ,0273	.0008 .0060 .0080 .010 .0273	. 0008 . 0060 . 0060 . 010 . 0273	. 0006 . 0060 . 0060 . 012 0293	.00010003 .00200035 .00200035 .00150035	. 0006 . 0006 . 010 . 02?	. 0003 0006 . 0030 0045 . 0030 0045 . 0016 0030	. 0003 - 0005 . 0030 - 0045 . 0030 - 0045 . 0015 - 0030	.00030006 .00300045 .00360046 .00150030
Tensions (Ft. Lb.) Main Bearing Botts Connecting Rod Botts Connecting Rod Pal Nuts Cylinder Haad Botts. Manifold Nuts Flywheel Cap Screws	08 105 45 50 75 23 28 75 85	95 105 45 50 75 23 28 75 85	96-105 45-30 75-23-28 75-85	95 105 45 50 85 23 28 75 85	95-105 45-50 75-23-28 75-85	120 130 45 50 90 23 28 75 85	120-130 46-50 90-110 23-28 75-89	120-130 45-50 110 23-28 75-85	150-164 50-65 3-4 130-150 23-28	150 164 50 55 3 4 130 150 23 28	150-164 50-55 3-4 130-150 23-28

Engine and Construction Equipment Selection Specifications Begin Here

### **Gasoline Engines**

		MAXII	E Hp.	ln.)				L			VALVE	ES			non	L	CRANKS	HAFT	CAR	
ENCINE	n.)	at Specifie	d M.P.M.	nt (Cu.		e at with or ries	-Type			in	Dian	em neter			per Piston	8	MAIN BEA	RINGS		T
ENGINE MAKE AND MODEL	of Cylinders, I Stroke (In.)	Engine	lard	splacement	on Ratio	(Lb. Ft.) w Accessories	Liners-1	ut	(1)	n.)	(1)	n.)		nats Lposn	Rings		Diame: Length	ter and h (In.)		
	Number of Bore and 3	With Bare	With Standard Accessories	Piston Dis	Cempression	Maximum R.P.M. (LI without Ac	Cylinder L	Arrangement	Intake	Exhaust	Intake	Exhaust	Angle (Deg.	Inserts Us	Number of	Number	Front	Rear	Make	Gine
Ilia-Chalmers B-125 W-226 4B-153 4B-182 6B-230 6B-273 HP-326 HP-351 K-426 L-525 L-0-525 6-MO-970 B-MO-1290 1PC-1879 2PCG-1879 3PPCS-2506	4 35 x 31 x 4 4 x 4 1 x 5 1 x	30-1900 63.6-1800 47-2400 56-2400 73-2400 82-2400 105-2400 113-2400 113-2400 200-2000 210-1900 259-2000 280-1200 465-1200 465-1200	37-2000 47-2000 68-2000 68-1900 68-1900 95-1900 114-1800 235-1800 235-1800 258-1200 326-1200	226.0 153.0 182.0 230.0 273.0 326.0 525.0 525.0 970.0 1290.0 1879.0 2505.0	6,45 6,00 5,54 6,00 5,40 5,83 5,33 4,75 5,00 5,50 5,43 6,00 6,00	193-1000 (EA) 112-1500 (BE) 140-800 (BE) 168-1000 (BE) 204-1200 (BE) 220-1100 (BE) 232-900 (BE) 232-900 (BE) 2340-900 (BE) 340-900 (BE) 350-1000 (BE) 1300-800 (BE) 1300-800 (BE)	***************************************		.360 .376 .429 .429 .429 .344 .344 .400 .400 .540 .540 .703 .703 .703 .703	.360 .369 .429 .429 .344 .344 .400 .400 .468 .540 .540 .703 .703 .703 .703	.341 .372 .312 .312 .372 .372 .372 .372 .372 .372 .372 .37	.341 .372 .312 .312 .312 .372 .372 .372 .372 .372 .433 .433 .433 .558 .558	45 45 45 45 45 45 45 45 30 30 30 45 45 45	NENNNNEEEEEEEEEEE	4 4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5	3 3 3 7 7 7 7 7 7 7 7 7 7 7 7 7 9 9	2.44x1.62 2.50x1.25 2.50x1.25 2.50x1.25 3.00x1.50 3.00x1.75 3.00x1.75 3.00x1.75 3.89x3.00 3.89x2.25 4.50x2.68 4.68x2.68	3.00x2.12 3.00x2.12 3.00x2.50 3.00x2.50 3.89x2.25 3.89x3.75 3.75x3.48 3.75x3.48	Mas Zen Zen Zen Zen Zen Zen Zen Zen Zen Zen	
hrysler Ind. 30 Ind. 32 Ind. 54 Ind. 56A	6-314x454 6-374x434 8-354x381 8-318x358	99-3600 120-3600 173-4000 188-4000	66-2400 79-2400 114-2800 135-2800	265.0 315.0	6.80		NNNN	1	.379 .379 .368 .381	.379 .379 .375 .357	.340 .341 .372 .372	.340 .340 .433 .372	45 45 45 45	EEE	4 3 3	4 4 5 5	2.50x1.55 2.50x.837	2.50x1.58 2.50x1.58 2.50x1.56 2.50x1.62	Car	1
ontinental N-4062 N-66 N-62 Y-69 Y-4069 Y-4069 Y-4069 Y-4069 Y-4061 E-201 F-244 J-382 F-1124 G-134 F-4140 G-157 F-162 F-4152 H-227 H-243 H-260 F-186 F-672 F-486 F-686 F-686 F-686 F-687 T-687 T-647 U-6501 U-6501 U-6501 R-6572 R-6572 R-6572 R-6572 R-6572 R-6572 R-6572 R-6573 R-6573 R-6573 R-6573 R-6573 R-6573 R-6573 R-6573 R-6573 R-6574 R-6570 R-6260 S-6260 S-6260 S-6260 S-6260 S-6260 S-6270 S-6260 S-6270 S-6260 S-6270 S-6260 S-6270 S	8-41,x41, 8-41,x41, 6-51,x51, 4-4x51	182.4-2400 220-2800 192-2400 232-2800 217-2200 250-2800 115-3200 123-3200 147-3200 220-2800 240-3200		56.0   69.0   69.0   99	6.80 6.46 6.60 6.30 6.30 6.30 6.90 5.82 6.90 6.30 6.40 5.65 5.65 6.70 6.70 6.70 6.70 6.70 6.50 6.30 6.30 6.30 6.30 6.30 6.30 6.30 6.3	51-2000 BE 67-1600 BE 70-1500 BE 70-1500 BE 170-1500 BE 171-1200 BE 192-1200 BE 192-1200 BE 192-1200 BE 193-1200 BE 194-1500 BE 194-1500 BE 194-1500 BE 124-1100 BE 124-1200 BE 125-1300 BE 137-1200 BE 147-1200 BE 165-1200 BE 165-1200 BE 165-1200 BE 165-1200 BE 165-1200 BE 176-1200 BE 176-1200 BE 176-1200 BE 1776-1200 BE 17	N N N N N N N N N N N N N N N N N N N		187 187 187 296 296 296 296 296 296 281 281 281 312 281 322 281 281 343 343 343 343 343 343 343 343 343 34	187 187 281 281 281 281 281 281 281 281 281 312 281 312 281 312 281 312 281 312 343 343 343 343 343 343 343 343 343 34	314 314 314 341 341 341 341 341 341 341		(h) (h) (n) (n) (h) (h) (h)	MMMMMMMMMM	3333333444344 4444444444444444444444444	7	1.75x1.37 1.75x1.37 1.75x1.37 1.75x1.37 1.75x1.37 1.75x1.37 1.75x1.37 1.75x1.37 2.81x1.34 2.55x1.83 2.25x1.18 2.25x1	2.56x1.483 3.50x2.00 1.75x1.655 2.25x1.89 2.25x2.18 2.25x2.27 3.25x2.75		
M-363 M-6363 M-6363 K-6363 K-6363 Ford EAE EAF EBR, EBS, EBT ECS ECT EEH, EEJ EEK	4-3-1x311 6-3-1x311 8-3-1x311 8-3-1x311 8-3-1x311	212-3800 186-4000	39-2000 39-2000 48-2200 126-4000 172-3600 187-3600 158-4000	363.0 134.0 172.0 223.0 302.0 332.0 292.0	6.66 6.75 8.36 7.66 7.66	0 300-1800 (BE 0 110-1450 (BE 5 149-1300 (BE 0 207-2250 (BE	DNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN	1 1 1 1 1 1 1 1 1	.466 .466 .355 .355 .369 .346 .400 .400	.369 .377 .377 .420	.342	.432 .341 .341 .341 .435 .435 .341	45 45 45 45 45 45	EENEEN	5 3 3 3 4 4 3 3	3 4 5 5 5	2.81x1.36 2.50x1.50 2.50x1.50 2.25x.923 2.62x1.03	2.81×1.94 2.81×1.94 2.50×1.65 2.50×1.65 2.50×.923 2.62×1.94 2.62×1.94 2.50×.907 2.50×.907	MaS MaS MaS Hel Hel	

### Gasoline Engines—continued

		MAXIF	E Hp.	ln.)						١	ALVE	S			ston		CRANKS	IAFT	CARB	
ENGINE	ders,	at Specifie	d R.P.M.	nent (Cu.	og.	with or	Type		Li (In		Ste Diam (In	eter	Se	ats	pre Pi	N	MAIN BEA			
MAKE AND MODEL	Number of Cylinders Bore and Stroke (In	With Bare Engine	With Standard Accessories	Piston Displacement	Compression Ratio	Maximum Torque R.P.M. (Lb. Ft.) w without Accessorie	Cylinder Liners	Arrangement	Intake	Exhaust	Intake	Exhaust	Angle (Deg.)	Inserts Used?	Number of Rings	Number	Length Length		Make	Size
Ford (continued) EDL EDM EDM D EDN D F F J L	8 4 x3 4 8 4 x3 4 4 3 9 x 3 6 4 3 2 x 3 6 6 3 3 4 x 3 6 8 3 5 x 3 6 8 3 5 x 3 6	226-3800 260-3600	190-3600 224-3400 246-3200	401.0 477.0	7.50 7.50 7.50 7.50 7.50 8.50 8.50	350-2300 (BE) 430-2300 (BE) 490-2300 (BE) 147-1400 (BE) 110-1400 (BE) 203-2000 (BE) 248-2100 (BE)	SNNDONNN		.414 .414 .414 .355 .355 .369 .400 .346	.414 .414 .414 .337 .369 .420 .374	.435 .435 .435 .343 .343 .342 .342 .342	.435 .435 .435 .342 .342 .341 .341 .435	45 45 45 45 45 45 45 45	Bo Bo Bo N N N	4 4 3 3 3 3 4	55554455	3.13x1.10 3.13x1.10 3.13x1.10 2.50x1.17 2.50x1.30 2.50x.923 2.50x.728	3.13x1.10 3.13x1.10 3.13x1.10 2.50x1.22 2.50x1.64 2.50x.923	Hol	1 1 1 1 1 1 1
GMC 270 270 302 336 336 503 503	6 3 1 1 x 4 6 3 1 1 x 4 6 4 x 4 8 3 7 x 3 7 x 8 4 x 3 1 1 6 4 7 x x 5 1 x	130 3600 140 3600 160 3800 200 4400 232 4200	121-3400 127-3400	269.5 301.6 336.1 370.7	7.75 7.50 7.50 7.65	246-1800 (BE) 268-1800 (BE) 307-2200 (BE) 355-2600 (BE)	N N N N N	1 1 1 1	.395 .395 .395 .373 .435 .460	.387 .387 .387 .373 .435 .460	.341 .341 .341 .344 .344 .372	.340 .340 .340 .344 .391 .434	30 30 (h) (h) 45 (h)	N N N E E	4 4 3 3 4	4 4 4 5 5 7	2.69x1.25 2.69x1.25 2.63x.938 2.75x.818	2.78x1.53 2.78x1.53 2.78x1.53 2.63x1.59 2.75x1.19 3.00x2.19	Holls	1 1 1 1 1 1
Hall-Scott. 2268-O 590-GV-3, 590-GV-4	12-5% x7 6-5x5 6-5x5 6-5x5 6-5x5 6-5x5 6-5% x6 6-5% x6 6-5% x7 6-5% x7 6-5% x7 6-5% x7	232 2800 246 2800 232 2800 246 2800 229 2400 312 2400 338 2400 356 2200 252 2406	205-2800 205-2800 205-2800 219-2400 294-2400 320-2400 317-2200 341-2200	590.0 590.0 590.0 590.0 590.0 935.0 935.0 1091.0	6.60 9.00 6.60 9.90 8.70 6.40 8.10 6.50	510-1800 BE 510-1800 BE 510-1800 BE 510-1800 BE 510-1600 BE 830-1300 BE 870-1300 BE	N N N N N N N N N N N N N N N N N N N		.482 .500 .500 .500 .500 .500 .547 .547 .547 .547	.482 .500 .500 .500 .500 .500 .547 .547 .547 .482	.497 .496 .496 .496 .496 .496 .496 .496 .496	.528 .496 .496 .496 .496 .527 .527 .527 .527 .528	30 45 45 45 45 45 (h) (h) (h)	мымымымым	633333444444444444444444444444444444444	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	3.24x1.67 3.24x1.67 3.24x1.67 3.24x1.67 3.25x1.67 3.50x2.10 3.50x2.10 3.50x2.10	3.25x2.09 3.25x2.38 3.25x2.38 3.25x2.38 3.25x2.38 3.50x3.05 3.50x3.05 3.50x3.05 3.50x3.05 3.50x3.05	Cen Hol Cen Alg Hol Cen Hol	2 1 2 2 1 2 1 2 1 2 1 2
Hercules BXB	4 3 4 4 3 4 4 3 4 4 3 4 4 3 4 4 3 4 4 3 4 4 4 3 4 4 4 3 4 4 4 3 4	68-250 77-5-320 87-320 78-4-320 92-320 101-320 115-320 113-320 113-320 139-260 161-260 170-260 143-240 181-260 227-200 272-240	13-2009 13-2009 13-2009 13-2009 13-2009 142-32009 163-32009 163-32009 167-32009 173-32009 173-32009 173-32009 174-32009 175-32	65.0 66.3 113.0 113.0 1133.0 1141.0 1198.0 1214.0 221.0 226.2 226.	6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50	40 - 2200   8E   46 - 1100   8E   76   1800   8E   97   1800   8E   97   1800   8E   97   1800   8E   97   1800   8E   139   1400   8E   139   1400   8E   157   1400   8E   167   1400   8E   167   1400   8E   207	N D N N N N N N N N N N N N N N N N N N		.311 .369 .356 .369 .356 .369 .388 .388 .388 .442 .468	.369 .356 .311 .369 .356 .369 .356 .369 .388 .388 .442 .468 .500 .369 .369	.373 .375 .373 .375 .375 .373 .435 .435 .498 .498 .375	.248 .248 .310 .310 .310 .375 .373 .375 .310 .375 .373 .375 .373 .375 .373 .375 .373 .375 .373 .375 .373 .375 .375	30 30 30 30 30 30 30 45 45 45 30 45 45 45 45 45 45 45 45 45 45 45 45 45	Op Op Op Op Op Op Op Op Op Op Op Op Op O	000000000000000000000000000000000000000	7 7 7 7 7 4 4	2.00x1.31 2.00x1.56 2.00x1.56 2.00x1.56 2.00x1.56 2.50x1.31	2.00x1.37 2.00x1.37 2.00x1.62 2.00x1.62 2.00x1.62 2.00x1.62 2.50x2.12 2.50x1.6 2.50x2.12 2.50x1.8 2.50x1.8 2.50x1.8 2.50x1.8 2.50x1.8 2.50x1.8 2.50x1.8 2.50x1.8 2.50x1.8 2.50x2.1 2.50x1.8 2.50x2.1 2.50x1.8 2.50x2.1 2.50x1.8 2.50x2.1 2.50x1.8 2.50x2.1	Op Op Op Op Op Op Op Op Op Op Op Op Op O	
nternational UC-80 U-123 U-173 U-281 U-264-6 U-308 U-372 U-406 U-1081 U-1081 U-508 U-1081 U-401 UV-461 UV-568	4 3 x4 4 4 x5 1 x 1 x 1 x 1 x 1 x 1 x 1 x 1 x 1 x	34.2-200 51.5-200 70.5-180 72-240 83-240 92-240 110-220 139-220 214-160 141-220 170-280 179-260	78-2400 987.5-2400 104-2200 126-2200 200-1600 131-2200 160-2800 170-2600	123.0 175.0 281.0 220.0 264.0 308.0 372.1 450.1 0 401.0 0 461.0	0 6.40 0 7.00 6.65 6.55 6.50 0 6.51 6.59 6.59 6.56 7.50 6.50 7.60 7.60	0 39.5-1600 BE 7 97.8-1180 BE 0 150-1100 BE 0 237-1000 BE 0 177-1200 BE 0 198-1400 BE 0 230-1200 BE 0 288-1200 BE 0 348-1350 BE	W D D N N N D D D N N N N		.261 .388 .438 .397 .240 .406 .449 .625 .450 Hyd	.261 .388 .438 .397 .240 .406 .449 .625 .450 Hyd	.341 .341 .372 .372 .372 .372 .434 .435 .435 .435	.434 .434 .494 .434 .434	30 45 30 44 44 45 45 45	N E E	33444533334	3 3 4 4 7 7 7 7 7 5 5	2.13x1.55 2.56x1.5( 2.81x1.93 2.75x1.36 2.75x1.3( 2.70x1.13 3.25x1.6( 3.25x1.8) 4.13x1.7( 3.25x1.34 3.13x.96( 3.13x.96(	2.70x1.94 3.25x2.37 3.25x2.37	C-Z Own Own Zen Zen Zen Zen Zen Zen Hola	
Le Roi H540 TH540 H844 H844 H848 H858 F1500 F1500 H2000 L3000 L3000 L3460 L3460 L4400	8-41 x41 8-41 x44 8-51 x44 8-51 x47 8-51 x47 8-61 x7 6-61 x7 8-61 x7 12-61 x7 12-71 x7 12-71 x7	206-300 286-240 286-260 330-260 330-260 215-120 230-120 300-120 435-120 470-120 596-135 656-135	0 270-2400 0 265-2600 0 300-2600 0 300-2600 0 205-1200 0 220-1200 0 275-1200 0 435-1200 0 435-1200 0 640-1350 0 636-1350	540.0 0 844.0 0 884.0 0 884.0 1 1503.0 1 2004.0 0 2004.0 0 3006.0 0 3006.0 0 3468.0 0 4018.0	0 6.7 0 6.7 0 6.7 0 7.6 0 7.6 0 5.0 0 6.2 0 5.0 0 6.2 0 6.2 0 6.2 0 6.2 0 6.2 0 6.2 0 6.2	0 421-1600 EA 0 450-1800 (85 0 450-1800 (85 0 710-1700 (85 0 730-1700 (85 2 780-1800 (85 6 1090-650 (85 6 1090-650 (85 6 1485-650 (85 6 1485-650 (85 0 2360-700 (85 3 2710-900 (EA 3 32710-900 (EA 5 2950-800 (85	W W W W N N N N N N N N N N N N N N N N		.548 .548 .548 .548 .548 .548 .625 .625	.410 .450 .450 .480 .480 .548 .548 .548 .548 .548 .548 .625 .625	.373 .435 .435 .434 .624 .624 .624 .624 .624 .624 .622 .622	.373 .434 .434 .434 .624 .624 .624 .624 .621 .621	45 45 45 45 45 45 45 45 45 45 45 45	E	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	5 5 5 5 5 4 4 3 3 4 4 8 8 8	3.25x1,1/ 3.75x1,3/ 3.75x1,3/ 3.75x1,3/ 3.93x5,2/ 3.93x5,2/ 3.93x5,2/ 3.93x5,2/ 3.93x5,2/ 5.50x2,3/ 5.50x2,3/	2 3.25x1.12 2 3.25x1.12 3.75x1.36 3.75x1.36 3.75x1.36 3.75x1.36 3.93x5.26 3.93x5.26 5 3.93x5.26 5 3.93x5.26 5 3.93x5.26 5 3.93x5.26 5 3.93x5.26 5 5.50x4.31 5.50x4.31	Zen Zen Zen Zen Zen Zen(2 Ens(2 Zen(4) Ens Zen(4) Ens Zen(4)	E) (1) (1) (1) (2) (1) (2) (1) (2) (1) (2) (1) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2
Mack Magnadyne EN291 Magnadyne EN331 Magnadyne EN401 Thermodyne EN707C Thermodyne EN707C	6-35/4 x45/6 6-4x45/6 6-4/1/2 x5/1/2 6-4/1/2 x5 6-5x6	122-280 150-280 185-280	114-2800 142-2800 167-2800	330.0 401.0 464.0	0 6.9 0 7.2 0 7.5		N		.430	.430 .430 .471 .500	.435 .438 .438	.433 .438 .438	(h) (h)		5 5 4 5 4	7 7 7	3.00x1.4 3.00x1.4 3.00x1.4	3.00x2.12 3.00x2.12 3.50x2.13 3.50x2.22	Zen Zen Zen Zen	

### Gasoline Engines—concluded

		MAXI BRAK at Specifie	E Hp.	u. In.)							VALV	ES	,		ton		CRANKS	HAFT	CAR	
ENGINE	o (In.)	9		nent (Cu.	Ratio	with or	Type			ift n.)	Dia	tem meter in.)	S	eats	per Piston	-	MAIN BEA	RINGS		T
MODEL	d Stroke (In.)	Bare Engine	Standard	Displacement		num Torque at I. (Lb. Ft.) with it Accessories	Uners	ment					Deg.)	Used?	of Rings			ter and h (In.)		
	Number of Bore and	With Ba	With St Accesso	Piston C	Compression	Maximu R.P.M. without	Cylinder	Arrangement	Intake	Exhaust	Intake	Exhaust	Angle (D	Inserts U	Number		Front	Rear	Make	Size
Minneapolis-Moline 165A 206H V206B 283B 283E 403C 425A 6905A 6900 1210 \$71600		42-1600 51-1550 48-1550 59-1300 65-1400 80-1300 105-1200 149-1300 200-1200 291-1300	180-1200	206.5 206.5 283.7 283.7 403.2 425.5 605.0 800.0 1210.0	7.30 6.35 6.85 5.74 6.35 5.74 5.26 5.74	240-1200 (BE) 244-1300 (BE) 350-1000 (BE) 325-900 (BE) 465-800 (BE)	NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN		.469 .469 .494 .494 .494 .494 .494 .494	.470 .470 .470 .495 .495 .495 .495 .495 .495 .495	.341 .341 .434 .434 .434 .434 .434 .434	.341 .341 .341 .434 .434 .434 .434 .434	45 45 45 45 45 45 45 45 45 45 45		4 4 4 4 4 4 4	33233344444	2.75x1.75 RB 2.91x2.68 2.91x2.68 2.91x2.68 2.91x2.68 2.91x2.68 3.49x2.53 2.91x2.68	3.00x2.18 3.00x2.18 Ba 2.91x3.50 2.91x3.50 2.91x3.50 2.91x3.50 3.49x3.13 3.49x3.13	Mas Mas Mas Mas Mas Zen Zen Zen	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Oliver 550HC 770HC 880HC Super 99HC Super 168HC Super 178HC Super 188HC Super 188HC Super 188HC	4-31-x334 6-334x4 6-4x4 4-31-x334 6-334x4 6-4x4 6-434x514		69 1675	216.5 265.1 302.0	7.30 7.30 6.20	232 - 800 EA 107-1000 EA 164-1000 EA 204-1000 EA 232 - 800 EA 430-1100 BE	W W W W W W D N		.360 .313 .344 .344 .344 .344 .344 .344	.360 .281 .344 .344 .344 .344 .344 .344	.373 .373 .373 .373 .373 .375 .373 .373	.372 .372 .372 .372 .372 .372 .372 .372	45 45 45 45 45 45 45 (v)	мммммммм	4 4 4 4 4 4 4	3 4 4 4 3 4 4 4 7	2.25x1.63 2.63x1.75 2.63x1.56 2.25x1.44 2.25x1.44 2.63x1.50 2.63x1.56	2.25x1.63 2.25x1.63 2.63x1.75 2.63x1.56 2.25x1.44 2.25x1.44 2.63x1.50 2.63x1.50 3.50x2.93	M-Z Zen MaS MaS MaS MaS MaS	1 11 11 11 11 11 11 11 11 11 11 11 11 1
Reo OA-331 OA-282 OA-255 *OA-331-LPG OH-170 *255-OA-LPG OV-207 OV-235 *OV-226-LPG	6 41 x41 6 33 x41 6 41 x41 6 41 x41 6 41 x41 6 41 x41 8 31 x41 8 41 x41 8 41 x41	140-3200 124-3300 107-3400 142-3200	128 3200 110 3300 93 3400 130 3200 158 3400 86 3400 146 3200 186 3400 213 3400	331.0 292.0 255.0 331.0 255.0 331.0 390.0 440.0	6.40 6.55 6.70 8.20 7.50 7.15 8.20 7.30	260-1200 (EA) 218-1400 (EA) 183-1200 (EA) 258-1800 (BE) 297-1600 (BE) 182-1600 (BE) 280-1200 (BE)	* * * * * * * * * * * * * * * * * * *		.420 .420 .420 .420 .420 .420 .225 .441 .441	.420 .420 .420 .420 .440 .420 .238 .466 .466	.435 .435 .438 .438 .438 .438 .438 .438	.434 .434 .438 .438 .438 .438 .438 .438	30 30 30 30 30 30 30 30 30 30	E E B O B O B O B O B O	4 4 4 4 4 4 4 4	7 7 7 7 7 7 5 5 5	2.51x1.62 2.51x1.62 2.51x1.62 2.51x1.62 2.75x1.30 2.50x1.34 2.75x1.30 3.00x1.22 3.00x1.22	2.51x1.62 2.51x1.62 2.51x1.62 2.51x1.62 2.75x1.30 2.50x1.34 2.75x1.30 3.00x1.71 3.00x1.71 3.00x1.71	Zen Zen Car Ens Zen Ens Alg Car	111111111111111111111111111111111111111
Studebaker 1E 4E 3E, 5E 6E	6-3x43 6-34x45 8-34x31 8-34x35	92-3800 106-3400 170-4200 182-4000	83-3800 94-3200 141-3800	185.6 245.6 259.2	7.50 7.50 7.50	152-1800 (BE) 204-1400 (BE) 250-2800 (BE)	N N N	11	.344 .344 .359 .359	.344 .344 .359 .359	.313 .344 .344 .344	.313 .344 .344 .344	45 45 45 45	N N N	23 23 23 23	4 4 5 5	3.06x1.03 2.88x1.09 2.50x1.00	3.06x1.50 2.88x1.78 2.50x1.52 2.50x1.52	Car Car Str	11 11 11 11
Waukesha (12) ICK 12) FCK (11) 180GL8 12) XAH 11 185GL8 11 190GL8 11 190GL8 11 195GK 11 195GK 11 195GK 11 11 185GE8 11 1 1 185GE8 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6 45 x 5 x 6 5 5 x 6 6 5 5 x 6 6 6 1 x 6 6 6 1 x 6 6 6 1 x 6 6 6 1 x 6 6 6 1 x 6 6 6 1 x 6 6 6 1 x 6 6 6 1 x 6 6 7 x 8 1 x 5 6 7 x 8 1 x 8 6 9 8 x 8 1 2 8 x 8 1	188-2600 216-2000 240-2400 250-2400 222-1600 280-1800 134-2400 316-1150 432-1100 515-1200 900-1200	88 2700 10 2700 10 2700 110 2700 121 2700 121 2700 125 1800 125 1800 135 1800 143 2000 145 2000 145 2000 185 2000 185 2000 185 2000 185 2000 185 2000 186 2000 187 2000 188 2000 188 2000 188 2000 188 2000 188 2000 188 2000 188 2000 188 2000 188 2000 188 2000 188 2000 188 2000 188 2000 188 2000 188 2000 188 2000 188 2000	133.0 144.0 186.0 216.0 2265.0 320.0 320.0 404.0 426.0 451.0 525.0 5779.0 817.0 1197.0 1197.0 1197.0 12894.0 13520.0	6.75 5.50 6.75 6.20 6.20 5.60 6.30 6.40 6.40 6.40 6.20 6.20 6.20 6.20 6.20 6.20 6.20 6.2	97 1400 BE 118-1600 BE 131-1400 BE 176-1400 BE 223-1200 BE 241-1400 BE 244-1400 BE 337-1200 BE 337-1200 BE 420-1200 BE	N N W W N N D N W W W W W W W W W W W W	idelessale en enementes	.228 .281 .312 .302 .312 .359 .406 .406 .455 .452 .531 .524 .524 .656 .371 .371 .709 .770	.250 .281 .281 .275 .781 .411 .411 .411 .413 .405 .423 .405 .434 .524 .524 .531 .656 .350 .350 .350 .350 .360 .366 .366 .366 .366 .366 .366 .36	.312 .372 .375 .375 .375 .373 .375 .375 .375 .437 .437 .437 .437 .500 .500 .487 .500 .500 .485 .620 .681	.312 .372 .375 .373 .373 .375 .372 .375 .434 .437 .437 .500 .500 .500 .500 .434 .434 .619 .562 .681	45 45 45 44 44 45 45 6 6 6 6 6 6 6 6 6 6		43444444454454446555	233334444777777777777777777777777777777	ND1207 2.12x1.18 2.25x1.63 2.25x1.63 2.25x1.63 2.25x1.63 2.25x1.63 2.63x1.88 2.63x1.83 2.5x1.90 3.25x1.90 3.25x1.90 3.25x1.59	ND1207 2.12x1.43 2.25x1.63 2.25x1.63 2.25x1.63 2.25x1.63 2.63x1.75 2.63x1.75 2.63x1.75 2.63x2.75 3.25x2.50 3.25x3.00	Op O	5 5 7 7 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Wisconsin VE-4 VF-4 VH-4 VG4D VR4D	4-3x31; 4-31;x31; 4-31;x31; 4-31;x4 4-41;x41;	30-2800	25-2400 30-2800 36-2200	107.7	5.07	50-1700 (EA) 57-1700 (EA) 66-1700 (BE) 94-1500 (EA) 161-1300 (BE)	N N N N	44444	.275 .275 .275 .275 .275 .340	.275 .275 .275 .275 .275 .340	.309 .309 .309 .309 .373	.309 .309 .309 .309 .373	45 45 45 45 45	80 80 80 80	4 4 4 4	22222	Timken Timken Timken Timken Timken	Timken Timken Timken Timken Timken	Zen Zen MaS MaS Zen	1 11

### Notes and Abbreviations

Size

216

#—Dual throat.

-Super-charged engine.

-Liquid petroleum gas engine.

2 Four barrel carburetor.

-Natural gas engine.

-High output.

-Also available in R. H. rotation.

(2) -Two used.

(3) -Three used.

(4) -Four used.

(11)—Automotive power ratings. (12)—Industrial power ratings. (h)—Intake, 30; exhaust, 45. (n)—Intake, 45; exhaust, 44. (v)—Intake, 45; exhaust, 43.

ABBREVIATIONS

Alg—Algas, Ba—Ball bearing, BE—Bare engine, Ben—Bendix,

Bo—Used in both intake and exhaust seats.

Car—Carter Carburetor Corp.
Cen—Century.
C-Z—Carter or Zenith.
O—Dry liners.
E—Used on exhaust valve seats.
E—Engine with standard accessories.
Ene—Ensign.
Hol—Hydraulie valve lifters.

L—Valves at side (L-head).
N—No or none.
O—Optional.
RB—Roller bearing.
Str—Stromberg-Elmira D)v.
W—Wet liners.
Zen—Zenith Carburetor Div.

### **Diesel Engines**

						GE	ENERAL								MAIN BEAR- INGS	1	SYST	EM				- 1	ART- NG THO
ENGINE MAKE AND MODEL	Number of Cylinders Bore and Stroke (In.)	Cylinder Liners - Type	Cycle	Piston Displacement (Cu. In.)	Brake Hp. at specified B.P.M.	Max. Intermittent Hp. at Specified R.P.M.	Continuous Sustained Hp. at Specified R.P.M.	Compression Ratio—to 1	Max. Combustion Pressure	B.M.E.P. at Continuous Hp. (Lb. per Sq. In.)	Weight per Continuous Mp. (Lb.)	Max. Torque in Lb. Ft. at Specified R.P.M.	No. of Compression Rings	No. of Oil Rings	Number Diameter (In.)	Make of Pump	Make of Valve	ne Open	Lb. per Sq. In.)	Air Cleaner-Make	Fuel Filter Make	Make	Tvon
4DA-1 4DA-1 4DA-1 4DA-1 6DA-2 6DA-2 6DA-2 6DA-8 6DA-8 6DA-8 6DA-8 8DA-11 8DA-11 8DC-28 8DC-28 8DC-28 8DC-28 8DC-28 8DC-28 8DC-29	77 2 4 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	\$\$ 2 \$ 2 \$ 2 \$ 2 \$ 2 \$ 2 \$ 2 \$ 2 \$ 2 \$		844 970 1125 1125 11879 2505 252 2505 350 350 350 350 350 350 350 350 350	17-2000 37-2000 58-2000 58-2000 58-2000 58-2000 58-2000 58-2100 280-2100 280-2100 280-2100 280-2100 280-2100 280-2100 280-2100 280-2100 280-2100 280-2100 380-2100 380-2100 380-2100 380-2100 380-2000 118-2000 118-2000 140-1200 200-2000 310-2000	265-2000 119-1200 193-1300 314-5-1300 254-1300 328-1300 361-1300 388-1300 493-1300 548-1300	11. 5-1600 28-2000 34-2000 40-2000 40-2000 91-2000 91-2000 122-1690 147-1890 147-1890 210-1890 210-1890 210-1890 210-1890 210-1890 210-1890 210-1890 210-1890 210-1890 350-1290 283-1290 350-1290 270-1290 220-1290 231.5-1890 331-1890 331-1290 3307-1290 3307-1290 3307-1290 3307-1290 3307-1290 3307-1290	17. 25 15. 70 15. 30 16. 00 16. 00 16. 00 16. 00 16. 00 16. 00 15. 50 15. 00 15. 00 16. 00 17. 00 17	722 722 722 722 722 722 722 722 722 722	0	27.3 21.0 16.3 19.4 23.6 33.4 27.0 34.5 34.3 29.5 40.9 20.5 35.1 23.1 23.1 23.1 23.2 25.3 25.3 25.3 26.3	49-1400 111-1250 133-1500 111-1250 204-1400 60-1500 752-1200 830-1300 980-1400 1580-700 1581-100 158-100	ର କା ନା	222222222222222222222222222222222222222	7777388XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	0 AB	Own Own Own Own Own Own Own Own Own	000000000000000000000000000000000000000	750 750 750 750 750 750 750 750 750 750	Uni Vor Uni Vor Uni Vor Uni Vor Uni Vor Uni Don	Com BFC Com ABBFC Com ABBFC Com ABBFC Com Com Com Pur Pur Pur Com N Com N Opt Opt Opt Opt Opt Opt Opt Opt Opt Opt	ALL ALL DR DR L-D DR L-D DR L-D DR LN LN C-D	AE AE AE AE ER
JANS JANS JANS JANS JANS JANS JANS JANS	1.4 4 4 1.5 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6	**************************************	4 4 4	4011 4011 4011 4011 4011 4011 4011 495 495 495 672 743 773 672 743 7743 7743 7743 7743 7743 7743 774	115-1800 130-2000 165-2000 160-1800 180-2100 170-170-1800 190-2000 220-1800 220-1800 220-2100 280-2100 280-2100 335-2100 335-2100 425-2100 335-2100 425-1000 335-2100 425-2100 335-2100 425-2100 335-2100 425-2100 335-2100 425-2100 335-2100 400-2100 300-2100 400-1100 175-1800 180-2000 210-2000 320-2100 300-2100 300-2250	68-200 85-1800 93-2200 102-2200 125-2200 125-2200 137-2200 137-1800 97-1800 97-1800 97-1800 135-1800 140-2000 135-1800 148-1800 148-1800 188-2100 222-2100 224-2100 2254-2100 236-2100 236-2100 246-1800 160-2000 110-2100 254-2100	172-1800 192-1800 220-1801 221-1800 225-1800 285-1800 480-1800 225-1000 325-1000 130-1800 130-1800 140-1800 200-1800 201-1800 48-1800 48-1800 101-1800 101-1800	15.50 12.50 14.50 14.50 15.50 13.50 13.50 15.50 15.50 16.50 16.00 18.00 17.00 17.00	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	81 102 103 109 120 119 133 82 106 126 74 107 73 76 81 102 120 119 102 120 119 102 103 103 104 104 105 106 106 107 107 107 107 107 107 107 107 107 107	20.2 17.9 15.2 14.0 21.5 20.8 15.0 20.8 15.0 20.8 15.0 16.6 14.6 14.6 11.3 12.6 12.6 12.6 13.3 12.6 16.6 16.6 16.6 16.6 16.6 16.6 16.7 17.0 18.6 18.7 19.6 19.6 19.6 19.6 19.6 19.6 19.6 19.6	198-1300 305-1459 305-1459 305-1459 305-1459 305-1459 305-1459 375-1700 407-1759 407	*********************************	111111111111111111111111111111111111111	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	0 Own	N N N N N N N N N N N N N N N N N N N	CCCC	350 350 450 450 450	Fra	Com Com	DR DR DR DR	

						GE	NERAL								MAI BEA ING	R-	NJEC1 SYST	EM					RT- IG HOD
ENGINE	200	Туре		ent	With Bare Engine	With Sta Access		to 1	Pressure	1.)	snon	2	n Rings	-	T			or Closed	Opening				
MAKE AND MODEL	Number of Cylinders Bore and Stroke (in.)	Cylinder Liners T	Cycle	Piston Displacement (Cu. In.)	Maximum Brake Hp. at specified R.P.M.	Max. Intermittent Hp. at Specified R.P.M.	Continuous Sustained Mp. at Specified R.P.M.	Compression Ratio	Combustion per Sq. In.)	B.M.E.P. at Continuous Hp. (Lb. per Sq. In.)	Weight per Continuous Hp. (Lb.)	Max. Torque in Lb. at Specified B.P.M.	of Con	No. of Oil Rings		Diameter (In.) Make of Pump	Make of Valvo	Valve Type Open	Pressure Nozzle (Lb. per Sq. In.)	Air Cleaner - Make	Fuel Fifter - Make	Make	Type
6-711 Twin 4-7 Twin 6-7: T	G-4-1 x5	DDD WDDDDDNNNNDDW WWW.WWW.WWW.WW.WW.WW.WW.WW.WW.WW.WW.WW	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	2999   2999   2999   3393   4464   44777   41919   4477   4198   4477   4198   4477   4198   4477   4198   4477   4198   4477   4198   4477   4198   4477   4198   4477   4198   4477   4198   4477   4198   4477	59. 2000 65. 2000 65. 2000 66. 2000 66. 2000 67. 2000 67. 2000 67. 2000 79. 2600 77. 2600 77. 2600 79. 2600 79. 2600 102. 5. 3000 199. 2600 199. 2600 199. 2600 199. 2600 199. 2600 1105. 2	71-2600 84-2600 84-2600 98-2600 98-2600 98-2600 121-2600 121-2600 121-2600 121-2600 121-2600 121-2600 121-2600 121-2600 121-2600 122-2100 122-2100 221-2100	230 - 1800# 202 - 1800# 202 - 1800# 203 - 1800# 460 - 1800# 616 - 1800# 237 - 1800# 237 - 1800# 246 - 1800 25 - 1800 52 - 1800 52 - 1800 53 - 1800 67 - 1800 67 - 1800 67 - 1800 67 - 1800 67 - 1800 67 - 1800 67 - 1800 67 - 1800 67 - 1800 67 - 1800 67 - 1800 67 - 1800 68 - 1800 102 - 1800 220 - 1800 231 - 1800 240 - 1800 251 - 1800 252 - 1800 253 - 1800 253 - 1800 254 - 1800 255 - 1800 266 - 1800 27 - 1800 28 - 1800 29 - 1800 29 - 1800 21 - 1800 21 - 1800 21 - 1800 21 - 1800 21 - 1800 22 - 1800 23 - 1800 24 - 1800 25 - 1800 26 - 1800 27 - 1800 28 - 1800 29 - 1800 20 - 1800 21 - 1800 21 - 1800 21 - 1800 21 - 1800 21 - 1800 21 - 1800 21 - 1800 21 - 1800 21 - 1800 21 - 1800 21 - 1800 22 - 1800 23 - 1800 24 - 1800 25 - 1800 26 - 1800 27 - 1800 27 - 1800 28 - 1800 29 - 1800 20 - 180	17.00 18.00 17.01	3 1225   0 1250   1 1250   0 1	77 78 80 77 78 80 88 88 88 88 90 90 91 10 10 10 10 10 10 10 10 10 10 10 10 10	24.8 20.2 11.8 13.8 21.6 15.0 15.0 15.0 16.2 11.1 11.2 14.2 11.1 11.2 14.2 11.1 11.2 11.1 11.2 11.1 11.2 11.1 11.2 11.1 11.2 11.1 11.2 11.1 11.2 11.1 11.2 11.1 11.2 11.1 11.2 11.1 11.2 11.1 11.2 11.1 11.1 11.2 11.1 11.1 11.2 11.1 11.1 11.2 11.1 1	1000-125 480-122 560-140 165-110 210-110 220-122 560-140 165-110 230-122 106-156 165-122 106-156 166-1	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	.50 Own .50 Ow	Own	000000000000000000000000000000000000000	450 450 450 450 450 450 450 450 450 450	Don	F-A F-A Ff	DRR DRR AI AI AI OOM OOM OOM OOM OOR OOR	ARBA ARAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

### ABBREVIATIONS

- Without fan or muffler.

- Based on automotive or industrial weight.
- Supercharged.
- With all accessories.
- Front and center 2.75; rear 3.00.

AB-American Bosch.
AC-AC Spark Ping Co.
AEG-Air, electric or auxiliary gasoline engine.

AEL-Air, electric or inertia.

A-El—Air or electric.

Al—Auto-Lite (electric), Ingersoll-Rand (air).

Al.—Electric Auto-Lite Co.

A.R—American Bosch or Roosa Master.

BB—Bendit or Bosch.

B-D—Bosch or Demco.

BFC—Bosch, Fram and Cuno.

B-R—Bosch or Roosa.

C—Closed.

Cb—Commercial and Bosch.

C-F—Cuno and Fram.

Com—Commercial Filters Corp.

C-P — Commercial or Purelator.
D—Dry liners used.
D-M — Donaldson or Air Mare.
Don — Donaldson.
DRW — Deloo Remy Div.
DRW — Opt—Optional.
P-S — Furolator or Stewart-Warner.
P-S — Purolator or Stewart-Warner.
P-S — Purolator or Stewart-Warner.
Short torque; shaft RPM.
Sim—Simms.
Sim—Simms.
Uni—United Air Cleaner Div.
Vor—Vortex.
W—Wet liners used.

SERVICE

FRONT

REAR AXLE

TRANSMISSION

ENGINE

TIRES

WEIGHTS

# Heavy-Duty and Off-Highway Trucks The data listed below are for standard models. Optional engines, transmissions and rear axles are available. Additional on-highway truck specifications begin on page 87

Total Lining Area (Sq. In.)	712 842 896 1117 1128 1442 1620 1442 1117 1133 1000	678 1325 2185 2185 2185 1325 1527 2185 1004 496 1325 678		80	576 654 786 786 1072 1072 1620 1620 2406 2406 2406 2406 2406 2406 2406 2	****	
Actuation	III4I4444I44I	~~~~~~	-	******	*********		
Make	-990998-90-	*****	-				
Make and Model	FD901 FC901F6 FD901 FD901 FE15 FE15 FE15 FE15 FE15 FE15 FE15 FE1	27463 FU900 FU900 FU900 FU900 TF1800 TF1800		FE800 FE900 FE900 FE900 FE900 FE900 FE900	63.RA		
	Tim Tim Shu Shu Ca	mitting Sown Sown Mitting	*******	<b><u> </u></b>	00wn 00wn 00wn 00wn		
Goar and Type	######################################	THE PROPERTY	SF	***** 30	05 to 00 to to to to to to to to to	145	11111111
Model and Model	1614 SDH SFH 28M 24R 34R 8D72000 8D72000 28MR 8D45000 SFH	U200P D75S D75S D75S D100S D100S D100T PS204HX PS204HX	SLHD	U2008 1758 1758 1758 U200 U200 1758DPA 5W456 SD3010	34RA 4RA 30RA 47RA 47RA 30RA 72RA3 72RA3 50RA3		U200 U300 U300 SLMD SLMD
Heverse Speeds	THE EAST OF THE PARTY OF THE PA	Own Own Own Own Tim	F	FFFFFFF	000000000000000000000000000000000000000	Ford	EEEE
Forward Speeds	******	20404242200	10	-11-1111111111	00000000004444	0 2	50000000
Model and Model	90680 90680 90680 5A33 5A33 5A33 5A33 5A33 5A33 5A33	BC65 4MS1440 10F1220 4MS1440 GA966 4MS144 6F1220 CF1220 CF1220 CF1220 BF1220	300V	8C850 8C850 8C850 8C850 TG617RM10 5A850 5A43	10E650 151220 16807 10F1220 10F1220 17G609-		5A65 5A65 8051A 8051A 290V 290V 290V 290V
	Para Para Para Para Para Para Para Para	12410011411	Cla	2222222	AAAAAAAAAAA	Ford	GGGG EE
Torque (Lb. Ft.)	221 221 221 221 238 338 244 444 444 444 444 444 444 268 268 271 271 271 271 271 271 271 271 271 271	380 800 800 800 1075 1075 1075 380 380 380	360	540 540 540 540 540 790 325	375 570 800 800 850 850 850 1260 1390 1390 1386 375 850	286	484 484 484 356 356 356 356
Max. Brake. Hp. at R.P.M.	120 3600 120 3600 120 3600 137 3600 175 3000 212 3000 212 3000 182 3000 175 2500 137 3600	160-2500 320-2100 335-2100 320-2100 320-2100 400-2100 175-1800 175-1800 136-2100 320-2100	234 3900	212 3000 175 1800 200 2600 175 1800 154 2400 200 2600 320 2600 175 1800 171 2600	128 1800 218 2100 300 2100 300 2100 300 2000 470 2100 550 2100 650 2100 143 2100 300 2000	170 3900	232 2800 232 2800 210 2100 210 2100 179 3000 179 3000
Fuel Used	000000000000	0000000000	0	00000000	000000000000	O	00000000
Displacement	265 265 265 265 265 265 265 265 265 265	401 743 743 743 743 743 743 743 743 743 743	354	501 743 602 743 558 602 844 743 427	284 743 743 743 660 660 660 743 743 743 743 660	317	602 602 743 743 427 401 427
No. of Cylinders— Bore and Stroke	22.6.3 x 44.5 22.6.3 x 44.5 22.6.3 x 44.5 23.6.3 x 44.5 24.5 25.5 x 44.5 25.5 x 44.5 26.5	00 6 4 ×5 10 6 5 ×6 10 6 5 ×6 10 6 5 ×6 10 12 5 ×6 10 12 5 ×6 10 12 5 ×6 10 6 5 ×6 10 6 5 ×6 10 6 5 ×6 10 6 5 ×6	8 318×3%	116 4 x5 x 8 x 8 x 8 x 8 x 8 x 8 x 8 x 8 x 8	HRB 6 5 x 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	8-311x312	264 x55 065 x66 065 x66 065 x6 064 x4 764 x4 064 x5
Make and Model	Hd32 Hd32 BD262 BD262 BD308 RD406 RD501 RD	JBS8006 NHRBS6006 NHRBS6006 NHRBS6006 NHV12001 NHV12001 NHV12001 NHV12001 NHV12001	B	HD501 HR8600 HR8600 HXLD HR800 HR804 HR8600	N N 16 6 6 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1	d	R6602 R6602 NHR600 NHR600 T6427 18 5600
	Contraction	\$555555±55	5 Own	Control	SAN WARE WARE	Ford	COCCOUNT
laud—teeR betoN seeinU	7.50x20 7.50x20 8.25x20 8.00x20 10.00x20 11.00x20 12.00x20 12.00x20 8.00x20 8.25x20	12.00×20 18.00×25 16.00×25 18.00×33 18.00×33 14.00×25 14.00×25 18.00×25	5 10.00x22.	11.00×20 11.00×20 11.00×20 11.00×20 11.00×20 14.00×20 11.00×20	12, 00x25 14, 00x26 16, 00x26 18, 00x26 18, 00x26 18, 00x26 18, 00x26 18, 00x36 18, 00x37 18, 00x33 18, 00x33	9.00×20	11.00x22 11.00x22 11.00x22 10.00x20 10.00x20 10.00x20
front	7.50×20 8.25×20 8.25×20 9.00×20 10.00×20 11.00×20 12.00×20 10.00×20 10.00×20 10.00×20 10.00×20 10.00×20 10.00×20	12. 00x25 14. 00x25 14. 00x25 14. 00x25 14. 00x25 15. 00x25 17. 00x25 17. 00x25 17. 00x25 17. 00x25 17. 00x25 17. 00x25	10.00x22.	11.00x20 11.00x20 11.00x20 11.00x20 11.00x20 11.00x20 11.00x20 11.00x20	11.00x26 12.00x24 13.00x26 14.00x26 14.00x26 14.00x26 18.00x26 18.00x26 18.00x33 18.00x33 18.00x33 27.00x33	8.25×20	11.00x22 11.00x22 11.00x22 11.00x22 10.00x20 10.00x20 10.00x20
Chassis with Cab and Body	8,000 10,000 11,460 11,460 15,100 18,880 22,080 28,040 28,240 11,680 11,680 17,140	20,000 45,000 69,300 65,100 44,950 86,000 80,000 32,500 46,600	10,325	10,630 13,300 12,900 11,300 11,900 11,500 11,500	21,600 29,800 30,800 44,550 44,900 78,000 78,000 78,000 78,000 78,000 78,000 26,500 62,250	13,000	11,132 12,545 12,690 11,177 11,452
G.C.W.		001.100	********				
G.V.W.	25,000 33,500 35,500 35,000 43,000 66,000 68,000 68,000 37,000 37,000	40,000 95,000 139,300 126,000 180,000 62,500 39,000	46.000	48477749 9999999999	41,600 68,800 68,800 87,300 87,900 87,900 158,000 158,000 216,000 50,500	40,000	40,000 40,000 42,000 42,000 42,000
Maximum Standard	opt	144 176 206 200 200 200 176 176 178	192	188 190 178 232 232 208	148 156 165 165 177 177 177 180 219 219 219 238	Opt	193 193 193 193 193
muminiM brabnst8	1467 1489 1499 160 175 175 180 205 215 215 150 160	144 178 206 200 200 206 156 176 176	144	991 128 128 128 128 128 128 128 128 128 12	148 156 165 165 165 177 177 180 219 219 219 219 219	130	145 145 145 145 157 157
Type	655555555555		Ch	556666666		Ch	55555555
MAKE AND MODEL	642 1064A 1064A 1364A 1364A 1364A 1864A 2064	100 100 100 100 100 100 100 100 100 100		K-501 LC500-4 LC500-4 LC500-4 LC500-6	R-10 8-19 8-19 8-12 8-12 8-12 8-12 8-13 8-13 8-13 8-13 8-13 8-13 8-13 8-13	FD251B	600R1 600R2 D 700 R1 D 700 R3 400 R53 400 R54 D 400 R54 D 400 R54
	Crane Carrier	Dert	Dodge	Duplex	Euclid	Fabco	Federal

RADBER Ch. 187 193 49 000 13.200 11.00x22 11.00x22 Cont. U6501 6-41.x51.4 501 G 179-2600 413 Ful. 5A65 5 1 T/m. SQDD HV

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For abbreviations see nest page.

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157 193

400R54 Ch D400R54 Ch

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Heavy-Duty and Off-Highway Trucks (continued)

The data listed below are for standard models. Optional engines, transmissions and rear axies are available. Additional on-highway truck specifications begin on page 87

ESE	Total Lining Area (Sq. In.)		1260	789	1	1189		
BRAKES	Actuation	*****	<<<	<<<<	«	I	HERRICA	
200	Make	11111111	2	00wn 00wn	BW			planetary.  Il floating  li floating  out Axle C  houttle.  houttle.  afing.
AXLE	bra svaM Model			W2209MT W2800F W2801F	27463N	FD901 27461 F2090 F2090 FE900 FE900 FE900 FE900		tevel, full Div. 5d. round shu esha Mot full float
		00wn 00wn 00wn	Own	0 wn 0 wn 0 wn	Tim.			Spiral Spiral Spiral Spiral Spiral -Spiral -Spiral -Tunker -Tunker -Wauk -Wauk
	Gear and Type		***********	00000	H	PATE SOUTH THE S	NE N	Spin Spin Nau
REAR AXLE	bns e and Model		817 WA8906 WA2201 WA2206 WA2208 SFD3020 SFD3020 SFD3020		SFDD4640	SCHD 38M 38M 38M 38M 38M 38M 38M 38M 38M 38M	Ford Chevrolet Chevrolet Own FCR Tim SD3010P Tim SW3012PA	Boating.
		000000 00000	Own Own Own Own Tim	Own Own	Tim	Eat Time Time Eat Time Time Time Eat Time Time Time Time Time Time Time Time	Ford Chey Chey Chey Tim Tim	S Corp ting. grans, rs Co.
	Reverse Speeds	5885555	40000000000		-			flotori Il float elical gid. Motor al Ha
8810	Forward Speeds	2882222			=			ules N d, ful oid hi oid hi cott d. Div. Process nal.
TRANSMISSION	Make and Model		TG602 TG802 W817 W8271 W2208 W2208 W825 W825 W825 W826	W2209MT W2209MT TG602 TG602	8041	290 V	olet FA 5C72 5C72 5C72	Her—Hereubes Motors Corp. Pre—Hyrodic All flusting. HHR—Hyrodic helical gears, full Her—Hyrodic helical gears, full HS—Hall-Scott Motors Co. HS—Hall-Scott Motors Co. Int—International Harvester CC Int—International Harvester CC NP—New Process. NP—New Process. S—Cimple. S—Cimple.
-		Own Own Own Own	AMIL OOM OOM OOM OOM OOM OOM OOM OOM OOM OO	Own	BL.	555555555555555555555555555555555555555	Ford Chevrolet Chevrolet Own Ful Ful	
	Torque (Lb. Ft.)	560 695 775 695 695 900	\$05 818 850 850 850 860 860 860 860 860 860	865	878	297 2297 2297 2297 2297 2297 2297 3354 3354 3354 3354 3354 3354	306 3308 310 540 540	free
	Max. Brake Hp. at R.P.M.	205 2100 220-2100 250-2100 290-2100 320-2100 335-2100	180 2000 300 2100 190 2000 190 2000 190 2000 240 240 330 2000 330 2000 330 2100 160 1800	320 2100 320 2100 335 2100 368 2200 1	200 2100	170 3400 176 3400 176 3400 170 3400 170 3400 170 3400 207 3400 207 3400 175 2500 207 3400 207 3400 207 3400 207 3400 207 3400	190 3800 190 3800 195 4000 240 2400 150 1800 200 2100	ek Corp. bevel grars, reduction.
	Fuel Used	0000000	00000000000	0000	Q	00000000000000	00000000	Co. true
NE	Displacement	743 743 743 743	743 743 743 743 743 743 743 743 743 743	743 743 743	743	331 331 331 330 330 330 330 330 330	332 332 322 322 779 779 743	End dump truck End dump truck I floating. Unler Mfg. Co. solune. Feneral Motors Coloral Feneral and be Helical and be floating. and be floating.
ENGINE	No. of Cylinders— Bove and Stroke	**************************************		6 51 x6 6 51 x6 6 51 x6 6 51 x6	6 51, x6		6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Egi-Eaton Atle (b. EDT-End dump truck, E-Dall floating, Full-Puller Mfg. (b. G-Lasoline, GM-Ciscular Motors (cop. H-18-brand Motors (cop. H-18-brand Motors (cop. H-18-brand and hevel b. HOI—Hypoul double reduction Defined. Housel develues
	Make and Model	ENDT673 NH68 NH68 NH768 NH768	MRF8600 NHRS600 HRF8600 HRF8600 HRF8600 HRF8600 NHRS600 NHRS600 NHRS600 NHRS600 NHRS600	NHRS NHRS NHRS NRTO 618281	NHB600	0H170 0H170 0H170 0H170 0H170 0V207 0V207 0V207 0V207 0V207 0V207 0V207	Ford. Chevrolet Chevrolet Wau 145GKB Cum HR800 Cum NH8600	Corp.  Corp.  Solution  Corp.  Balting  Boating
		Coummy	Count Wall	Cum Cum Cum H-S	Cum	00411 00411 00411 00411 00411 00411 00411	5 Ford 5 Chev 5 Chev Cum Cum	house, at Co. otors C ne Co. Snergy n. free
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T	Front	11.00x22 11.00x22 11.00x24 12.00x24 12.00x24 12.00x24	13 00x26 16 00x26 17 00x20 13 00x20 13 00x20 13 00x24 13 00x24 11 00x20 11 00x20	11.00x24 14.00x24 14.00x24 18.00x25	10.00×20	9.00x20 9.00x20 9.00x20 10.00x20 11.00x20 11.00x20 10.00x20 10.00x22 11.00x22 11.00x22 11.00x22 11.00x22 11.00x22	10.00x22.5 9.00x22.5 9.00x22.5 12.00x22 11.00x20	BW—Bendix-Wettingbouse.  Ch.—Chassies.  Ch.—Chassies.  Ch.—Chassies.  Ch.—Chark Entityment Co.  Cont.—Chark Entityment Motor Use  Cont.—Charming Engine  D—Bred Charming Charming Charming Charming  D—Bred Charming Charmi
S	Chassis with Cab and Body		16,000 46,000 46,000 14,400 16,500 16,900 19,500 19,500	29.000 21.000 55.400 55.000		11, 110 12, 725 11, 965 12, 085 12, 210 13, 436 13, 200	10,170 11,640 10,250 11,000 15,000	with with tree . Tree
WEIGHTS	G.C.W.							of the spirit
	G.V.W.	85,000 65,000 65,000 65,000	86.000 86.0000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.0000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.0000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.0000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.0000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.0000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.0000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.0000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.0000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.0000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.0000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.000 86.00	65,000 62,000 120,000	44.000	43,000 43,000 43,000 43,000 42,000 42,000 45,000 45,000 45,000	40,000 48,000 42,000 42,000 42,000	d in e three three drauli
SE.	murnixaM brabnat2	174 165 186 186 186 186 186	200 500 500 500 500 500 500 500 500 500	000000	Opt	Ø Ø Ø	225 225 226 226 220 220 220	axie, 16 ft.  In five specific only.  Brown-Lip.  Kir over by llison Div.  Revel gear.  floating.
BASE	muminiM brabnat2	174 165 186 186 186 186 186 186	158 178 178 178 178 178 178	1200000	194	151 145 130 130 130	157 138 138 180 180	5—Tractor axle, 6—Own five Brow A—Air. AH—Air. Bdf—Hevel Bdf—Hevel Borr—Borrel BDT—Borrel BDT—Borrel BL —Borrel Bl.
	Type		500555555555		Ch	55555555555555	5555555	
		B-81365X B-8355X B-8355X B-8535X B-8535X B-875X	W-2100M W-2500 W-2501 W-817 W-827 W-2211 W-2208 W-2208 W-226 W-226 W-226 W-226 W-226 W-226 W-226 W-226 W-226		381	C-438 C-438 C-400 6x81 C-530 C-530 A-733 A-633 A-633 A-733 A-733	F800-4R F900-4R C9103-4R C10103-4R AGR D5T D5ST	ATIONS SINGLED A LPG as SINGLED A LPG as See optional. To engine option we axle to train we axle to train
	MAKE AND MODEL	Mack, continued	Onhicosh		Peterbilt	- Beo	Fruckstell Walter Ward La France	* Other options available.  * Anole 333-10A, 233-10A, 139 and 190 LP3 engues optional.  * Anole OH-160 LP3 engine optional.  * Tractor only; drive axle to trailer axle, 30 ff.  * Tractor only; drive axle to trailer axle, 30 ff.  * Tractor only; drive axle to trailer axle, 30 ff.

# **Tractors** Crawler

C32

page

manufacturers, see

to

addresses

For

double reduction,

DP Double ri

BDTr-Bottom dump, tractor trailer.
BL-Brown-Laps.
Bu-Butans.

trailer

to

axle

drive

3—Two used.
4—Tractor only; cash, 184 in.

958

Starting Method Ele Ele 8888 Ele 8666666 2222222222 Final Drive Case (Qts.) (Each Case) 25 20 21 21 21 21 21 2000 41.0002 NO 11 00 00 0 30 22 30 CAPACITIES Transmission (Qts.) 185 195 195 195 195 88 4 5 8 S -- 2222285 -- 2222285 32228 8 2 8 8 8 8 8 Crankcase (Qts.) 8667384788 224212 4000 325 25 38 38 38 8888=00 32000 28 30 48 118 157 33 33 135 135 (.mo.) what must 2223 101 Cooling System (Gal.) 0-989 8468 25 74 17 53 4283300 Steering Type 33333 CECE 888888 cla ಪಿಪಪಿಪಪಿ**ಸ** ಸ 9000 SP 2000000 Spans 20000 Clutch-Make and Type 0040 A-B-H Aub. Receipt Page 1 700 Boc 100 TO 1 All. Nov Nov Governor-Make Own 00000 0000 0000 0000 0000 0000 Nov Bos Bos Har Har Bos GM 808808 808808 Von N Air Cleaner-Make 55550 000000 Don Vor 5555555 Carburetor or Injector Pump—Make CAN DOWN MASS MS GM Bos 808 Ignition—Make DR NNNONS ZZZZ ZZZZZ 222222 0000 000000 0 0 0000000 0000000000 Fuel Used 00000 Diam. Main Bearings (In.) 200000 No. of Main Bearings はははははらアアアア ~~~ 000000 InemegnamA evisV 1700 1700 1600 1600 1530 1750 1750 2250 2250 2250 2250 650 600 200 200 200 200 200 200 1850 426s 2100 R.P.M. at Governed Speed 350 251 350 525 831 1246 1473 113 226 226 226 339 529 895 344 844 844 844 272 ENGINE G148 4 35,844 5 F209 6 378,848 8 H277 4 485 1 JD382 4 4 1,86 41,x5 No. of Cylinders—Bore and Stroke (In.) E S S S S S 414x4 444000 860000 Make and Model Own. 00000 0000000 Cown Her Her Her Cont GM - 33 2488 243" 3.3 8848 ... 6 (.H.q.M) acreveR figiH 8 82228 8883 222222 2822882228 SPEEDS GOVERNED R.P.M. 222222 3 Low Reverse (M.P.H.) N-NN NNNFOF 500 85 1 98 SIXTH GEBY (M.P.H.) 50.00 25000 828888 FITTH Gear (M.P.H.) 00 5. 80 4. 000000000 27 27 19 5. TRAVEL S NORMAL ENGINE 27 27 45 888 Fourth Gear (M.P.H.) 52 40 50 50 6.0 6.0 8888 252288 80 8848845 2222222222 Third Gear (M.P.H.) 3073.3 288888 524433 00 7 8883 AT Second Gear (M.P.H.) 50 22. 150 4. 10 8. 2888888 2822 222222 First Gear (M.P.H.) 3900 1. 897 1 \$200 1 6291 1 Sixth Gear (Lb.) MAXIMUM DRAWBAR PULL AT NORMAL GOVERNED ENGINE R.P.M. 2975 2337 2403 2864 8057 8454 4560 2230 2600 3600 5280 9490 2104 Fifth Gear (Lb.) 4450 6800 11270 9000 3391 1424 Fourth Gear (Lb.) 3415 2345 3415 2345 5204 3426 5204 3706 4160 2840 4520 2800 7831 5728 1313 5788 \$550 9070 15105 26000 2190 7750 9000 1000 Third Gear (Lb.) Second Gear (Lb.) 12640 20470 33100 60000 70000 4862 First Gear (Lb.) No. of Reverse Speeds --No. of Forward Speeds -\*\*\*\*\*\*\* 888 8888 888888 958785 02122222000 RATING Drawbar 2552388 SEESSEERSS 25.72 848.39 42 85 81 75 75 68 28 88 88 88888 888888 2538 Hell 288838 255 14 9 83 43 57 85 191 320 28 8228 HD-11 HD-16A HD-16AC HD-21AC 00-4-30 00-4-30 00-60 00-60 00-60 00-120 00-130 00-18 000000 Allia-Chalmers

ABBREVIATIONS 2—With torque or 3—2nd reverse 40,7.20.
4—2nd reverse 4th, 7.20.
4th, 7.00.
5—Total for all or 6—2nd reverse sp

Sth. 7

Aub City Court Don Don track 6393 5.70 5.20; (

emy Drv. starting motor, de, operating m lasoline.

Independent gasoline en

General Motors Corp.

Hartford. dry.

es at side).

Planetary

Backford Clutch Div.

Rockford Clutch Div.

Single black, dry.

Torque converter.

Tempor Single black for.

Tinden Mig. Co.

Tinden Mig. Co.

Triple plate operating in

Clutch Specialties. 

COMMERCIAL CAR JOURNAL, July, 1958

3rd, 7.80.

4.00.

For addresses of manufacturers, see page C32

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	Brake Actuation	MINITITITI	Hyd	IIIIIIIIIIIIII			TITITITI	TITITI
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TIRE	Front	7.50.24 7.50.24 9.00.24 9.00.24 9.00.24 9.00.24 14.00.24 14.00.24	6.50/16 6.50/16 9.00/24	13.00 24 12.00 24 12.00 24 12.00 20 14.00 20 14.00 20 13.00 24 13.00 24	9.00/25	7.50/20 7.50/20 7.00/20 7.50/24 7.50/24 7.50/24 13.00/24 13.00/24 14.00/24 14.00/24	13.00.24 14.00.24 14.00.24 14.00.24 14.00.24 16.80.24 7.50.16	14.00.24 14.00.24 14.00.24 14.00.24
	Lift for Ground Clostrance (In.)	77777	122	222222222	929	22222222222	817877778	20000000 0000000
(BLADE)	Width (In.)	20 20 20 20 20 20 20 20 20 20 20 20 20 2	16% 24 24 24 24	222222222222222222222222222222222222222	24	82822222888888888888888888888888888888	22 22 24 24 26 26 13	22222
MOLDBOARD (B	Length & Thickness	2555555	12.32		2.3.0	10000000000000000000000000000000000000	*********	55555
OLDB	Ground Penetration (In.)			222228882			900000000000000000000000000000000000000	1111111
2	Pressure—Lb.	2210	4900	12490 12550 12550 12550 16250 16250 16400 16400		4975 4975 6300 6300 1179	12100 12140 12340 13500 13840 15520 15800 5400	14650 17800 17800 17850 17850
(M.P.H.)	Range of Severae	24-1-25-1-1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-	3.2.3.7.0	22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 23.00 20.00	4.0 6.3	44 44 44 44 44 44 44 44 44 44 44 44 44	7 20.2 7 20.2 7 20.2 7 20.6 7 20.6 1 5.7 4 2	64444 600000000000000000000000000000000
SPEEDS (M.	Nange of brawsoff	######################################	2.7 25.6 2.6 25.2 2.7 20.6	2.5.20.8 2.5.20.8 2.5.20.8 2.0.17.8 2.0.17.8 2.0.17.8 2.0.17.8	2.3-19.3	2.3.20 2.00 2.0	7.20.2 7.20.2 7.20.2 7.20.6 7.20.6 1.7.20.6	5 2 2 4 1 1 1 1 2 4 1 1 1 1 1 1 1 1 1 1 1
S	No. of Reverse		m	************	04.04		200000000000000000000000000000000000000	600000
	No. of Forward	2000 8 8 8 2000 8 8 8 2000 8 8 8 8 8 8 8	1400 4 1625 4 1600 6	8888888888	800 8	1500 4 4 1800 6 6 1800 6 6 1800 6 6 1800 6 6 1800 6 6 1800 6 6 1800 6 6 1800 6 6 1800 6 6 1800 6 6 1800 6 6 1800 6 6 1800 6 6 1800 6 6 1800 6	000444400	888888
	Max. Brake Hp at R.P.M.	60 18 80 18 80 18 80 18 115 18 123 18 123 18 150 18 190 20 190 20	50 14 50 16 120 16	102 2100 102 2100 102 2100 102 2100 115 1900 116 1900 116 1900 116 1900 110 1800	75 180	50-1500 46-1800 60-1800 75-1800 100-1800 115-1800 115-1800 116-1800 116-2500 140-2100	200 200 200 200 200 200 200 200 200 200	145 211 145 211 145 211 145 211
	Displacement (Cu. In.)	216.5 212.8 401.0 283.7 283.7 283.7 283.7 495.0 425.6 425.6 743.0	226.0 230.0 516.0	212.8 212.8 212.8 212.8 212.8 283.7 283.7 283.7 460.7	525.0 350.0	226.0 201.0 281.0 281.0 380.0 213.0 213.0 525.0 672.0 672.0 743.0	349.9 212.8 212.8 212.8 401.0 283.7 401.0 425.6 162.0	288.7 529.0 283.7 529.0 529.0
ENGINE	No. of Cylinders— Bore and Stroke (In.)	44444444444444444444444444444444444444	4 4x415 6 312x416 6 412x516	\$ 0 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6 4 x5	6 6 4 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	44444444444444444444444444444444444444	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
	Make and Model	4-51 3-71 1881 4-71 NHC81-400 NHC81-400 6-71 HB8-600 6-71 HR8F1-600	ADSS16	3.77 3.77 5.77 6.77 4.71 0.014A		F226 ED201 UD281 UD380- UD14A2 177 UD14A2 177 H681 140DG77 140DG77 140DG77 140DG77 140DG77 140DG77	JB15600 3-71 3-71 3-71 3-71 JB15600 6-71 F162	4-71 PM529 4-71 PM529 4-71 PM529
		CO	Own Own	SECONO E CONTRACTOR E	Own	Comm.	COMMUNICORY	M PE SER
NS	Height-With Cab	911, 10,8, 10,8, 10,8, 10,8,	8.87%	90.99 90.99 10.40	9.10"	888 888 1066 1077 1077 1077 1077	10.7 10.8 10.8 10.8 10.8 10.10	10.22
DIMENSIONS	Height-Without Cab	777777777777777777777777777777777777777	96.13	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7.8"	930888555 930888555 9308855555555555555555555555555555555555	0.000000000000000000000000000000000000	20000
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00	dignod	8.888888888888888888888888888888888888	18.71.2	26.3 26.3 26.3 26.3 26.3 26.3 26.3 26.3	25.2"	18'10" 223'0" 225'5" 225'8" 225'8" 226'8" 26'8"	25.8° 25.10° 26.4° 26.6° 26.6° 13.6°	28.77
(°q	LatoT	14435 20920 21320 22670 22796 23855 24325 27250 27730 27730 27730	8800 9350 23800	16185 16400 18642 18857 20950 21165 22850 22850 22850 22865	23155	8920 9360 15165 21065 22285 22285 23560 2415 28520 28520 37975	21750 22100 22450 24120 24800 27600 30000 6250	26850 26850 24400 24400 29350
WEIGHT (Lb.)	Rear	10225 14770 15170 16470 16645 17495 17495 20240 20720 20370 20370	6100 6590 17375	9078 9266 11527 11715 12263 12463 14103 14293	16440	6200 6640 11085 10765 10765 15675 15600 16090 16090 17250 20200 20200 20200 20200 20200 20200 20200 20200	15190 15700 16370 16980 19115 20440 4130	18450 18450 14300 14300 18775
WEI	fnori	4210 6150 6150 6150 6360 7010 7010	2700 2760 6425	7107 7134 7115 7115 8687 8772 8772	6715	2720 2720 4100 4100 6200 6610 6610 6810 8320 8320 1760	6560 6750 7750 7750 7750 7750 8360 8385 2120	8400 10100 10100 10575
	MAKE AND MODEL	220 330 330 440 440 550 550 660 Power Flow 680 Power Flow 680	000 84 85	96 Jodns 164 Jodns 68 Jodns 17-68 17-68 17-68 188 Jodns 188 Jodns 17-88	12	803 303 303 303 440 104 118 118 17-800 17-800 17-700 17-700 17-700	4D-75 4D-86 4D-115 6-D 8-D 7-D 7-D 5D-190 M-52	PM-12 PM-412 PM-412 PM-612 PM-612
		Adams	Allis-Chalmers	Austin-Western	Caterpillar	Galion	Huber-Warco	Pettibone

Scrapers

For addresses of manufacturers, see page C32

Int-International Harvester Co. Mec-Mechanical.

Mer—Hereules Motor Co. Myd—Hydraulie.

GM—Ceneral Motors Corp.

Cont—Continental Motors Co.

1-With torque converter.

8

		ENGINE		FRACTOR	-		1	RANSMISSION		CAPAC	CAPACITY (Cu.Yds	r. Vds.)	SCRAPER	SE SE				Overall	Dimensions	-	TIRES-	E UNI	COMPLETE UNIT
		940 		-dh		she		Travel Speeds-	-spa			eu	noitsneq		('u1)		(.nl) bas						
	Make and Model	No. of Cylind Bore and Str (In.)	Displacement (Cu. In.)	Max. Brake I	Fuel Clutch Type	Clutch Type	Reverse Spen	Forward-	Reverse	Struck	bequeli	Payload—To	O to boritsM	noitse[3	Width of Cut	Depth of Cut	Depth of Spr	цібиел	43PIM	Height	Front		цея
Own Own	TDS516 TD844 TD8844	6 5 4 x 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	516.0 844.0	155 2200 D 200 2000 C 280 2100 D	000	DPD 5		3.0 20.0	5.5.6	7.0	9.5	12.0 18.0 25.0	Hyd Cab	PFF	9712 102 116	24%	16% 31 16 34 24 36	21.5	10.0" 8'9" 10'11" 9'11"		18x25 21x25 24x29	900	16 18x25-16 10 21x25-20 14 24x29-24
0000		6 5 x x 6 5 x 8 5	805.0 805.0	200 2000 D 300 1800 D 300 1800 D	000	0000		2.7.29.1 2.8.25.1 2.3.20.5	3.7	13.0	18.0 25.0 25.0	19.5 27.5 27.5	Cab	0TP	124	Prac Prac Prac	430	10,00	10.9°4" 10.0° 11.9" 11.3° 11.9" 11.0°	8.,	12x20 14x24 20 x2	24 16 x29 22	14 38 x25 20 16 29 x29 22 3 22 29 x29 22
SE S	4-71 6-71 NRT681 6-110 6-110 NRT0681 6-110	4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	284.0 426.0 660.0 743.0 743.0 743.0	143 2100 C 218 2100 C 300 2000 D 300 2000 C 300 2000 C 335 2100 C 330 2000 C	88555555	RENWASS	222222	2.8 25.0 2.8 25.0 2.8 25.0	60 (B) (N) (P)	7.0 18.0 18.0 24.0 24.0	255.0 255.0 32.0 32.0 32.0	227.5 27.5 30.0 40.0 40.0	AAAAAAAAAAAAA A TIIIIIIIIIIIIIIIIIIIIII	PPR00000	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	04000000	222 24 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	29'10" 8'0 45'8" 111 45'8" 111 47'0" 111 47'0" 111	8.0° 8.4° 11.6° 8.4° 11.6° 10.3° 11.6° 10.3° 11.7° 11.0° 11.	to the	18x25 14x25 14x25 14x25 14x25 14x25 27x33 27x33	20022688	18x25 18 8 24x25 18 6 24x25 24 6 24x25 24 7 27x33 24 0 27x33 24 0 27x33 20 0 27x33 30
Cum	HR681 NTO681	6 51,x6 7	743.0	175-1800 D 262-2100 D	Sp	10.10		2.8 24.1	2.5	15.0	14.0	27.5	Cab	PRO 1	1300	55	19 34	4"	11.54, 10.2"	22	5x25 5x29	88	
COUNTRY	4-71 6-71 MBIS600 NRT681 6-110 NRT0681	6644 6644 6654 6654 6654 6654 6654 6654	283.7 425.6 672.0 743.0 660.0	210 2000 D 210 2000 D 200 1800 D 300 2000 D 335 2100 D	988899	0000004		3.2.29.59 2.6.29.9 2.6.29.9 2.6.28.4 5.5.30.0	8888 8888 8888 8888	18.12.23.3	9.0 18.0 27.0 27.0	20.00 32.5 32.5 32.5	333333	44444	222222	555555	23 28 28 20 20 20 44 44 44 44 44 44 44 44 44 44 44 44 44	37.3 11.4 44.2 11.9 11.9 11.9 11.9 11.9 11.9 11.9 11	44 1011 44 1011 9 1222 9 1222		18x25 24x25 24x25 27x33 27x33 27x33 27x33	24 22 24 22 24 22 24 22 24 2	2 18x25 12 8 24x25 18 8 24x25 18 4 27x33 24 4 27x33 24
E M		3 414x5 2	213.0	92 1800 D 99 2000 D	D SPD	00	04.04				0.0		Hyd	Hyd	3 :	10.10	11,4 30	5.5	61,0	1" 18x	18x26-1	00	0 14x20-12 0 14x20-12
Int <sup>4</sup>		44	350.0	65 1450 D 88 1800 D	00	0.0		2.4.21.0		4.4	0.0		Hyd	Hyd	22	00	14 25	5.5" 7.6"	9.66		15x26 18x26	00	0 10x20 12 0 10x20 12
Cum	L-71 HRS6 NRT6		111	143 D 240 D 300 D	9000	000		3.6 30.0 4.0 31.2 2.6 32.0 2	3.6	7.5	10.0 21.0 27.0	13.0	Cab	444	87 120 120	18	211. 29 24 36 22 42	2,0,0	8.6" 8'8" 11'10" 10'0"		18x25 2 24x25 2 14x24 1	20 24 2	0 18x25 20 4 24x25 24 6 29.5x29 28

4—Trartor engine only; seraper also has GM 6-4. Desel engine, 6-44,a5, 426 cu. in, 218-2100 hp. ABBREVIATIONS

2—(ne used for each engine. 3—Tractor only; senare also has transmission with three forward and one reverse alsed. 4—Gasoline engine also available.

Cab—Cable
Cum—Cammins Diesel Engine Co.
D—Diesel oil.
DP—Double plate.
DPD—Double plate.

DTP—Dozer type, positive,
Ele—Electric.
GM—General Motors Corp.
Hyd—Hydradic.
Int—International Harvester Co.

PF—Positive foread.

PFF—Positive foreard foread.

Prac—Any practical depth.

PRO—Positive roll out.

SP—Single plate.

SPD—Single plate, oper TC—Torque converter. Un—Unlimited.

# Grader and Scraper Shipments

Value 59, 517, 000 11, 268, 000 48, 249, 000 88, 036, 000 877, 000 5,774 1,155 4,619 7,978 373

39,025,000 10,704,000 28,321,000 76,734,000 954,000

5.637 1.510 4.127 8.493

Value 51.366.000 10.512.200 40.854.000 101.929.000 1.000.000

5.726 1.207 4.519 9.613

1955

Carrying and Hauling Scrapers
For use with Tracklaying Tractors
For use with Wheel-type Tractors
Motor Graders and Light Maintainers
Graders (except Motor Graders)

Source: Industry Division, Bureau of the Census.

COMMERCIAL CAR JOURNAL, July, 1958

For addresses of manufacturers, see page C32

# Powered Rollers

		Turning Radius (J1)	1800 2000 2000 2000 2000 1811 1811 1833 1833 1833 1833 1833	19.67	14.6 14.6 17.10 17.10 17.10 17.10 17.10 18.6 19.6 19.6 19.6 19.6 19.6 19.6 19.6 19	12.00	810° 1610° 1810° 180° 190° 180° 180° 230°	17.0"
	0	Ground Clearance (In.)		2000	E5127447-0005500	200000	992222222	18
	2	Height	69 88 88 83 83 83 83 83 83 83 83 83 83 83	222	200 200 200 200 200 200 200 200 200 200	888888	61 61 62 68 68 68 68 68 68 68 68 68 68 68 68 68	8 8
SNO	Overall (In.)	WIPIAA	51.8 63.5 67.5 67.7 67.7 67.7 67.7 67.7 68.3 83.3 83.3 83.8 83.8 83.8 83.8 83.8	666	252222222225	888844	22 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	22
DIMENSIONS	ò	Pength	128 176 176 190 190 190 205 205 205 205 205 205 205 205 205 20	177.5	127 1173 1173 1174 1196 1196 252 252 252 252	8888==	105 172 172 172 172 173 174 175 175 175 175 175 175 175 175 175 175	208
DIA	("	(I) ArbiW gnilloR	45 50 54 54 54 54 54 54 54 54 54 54 54 54 54	888	107 785 888888888888888888888888888888888	222222	888888888888888888888888888888888888888	22
	Rollers— Diam. x Width (In.)	Drive	48x32 53x50 60x54 60x54 60x54 60x18 60x18 60x18 60x18 60x18 60x18 60x20 60x20 60x20 60x20 60x20 60x20 60x20 60x20	4 7.50/15 4 7.50/15 4 7.50/15	40x38 40x38 53x50 53x50 60x54 60x54 60x54 60x54 60x54 60x54 60x31 60x31 60x31 60x31 60x31 60x31	30°, x36 30°, x36 30°, x36 36°, x36 36°, x36	36x32 36x32 48x42 48x42 53x50 53x50 53x50 50x54 60x54 60x54 60x6 60x6 60x6 60x6 60x6 60x6 60x6 60x	69x20 69x20
	Pol Diam. x	Guide	32x40 41x50 48x54 48x54 48x54 48x54 48x54 48x54 48x54 48x64 44x4 44x4 44x4 44x4 44x4 44x4 44x4 44x4 44x4 44x4 44x4 44x4 44x4 4	5-7.50/15 5-7.50/15 5-7.50/15	30x38 30x38 40x50 40x50 40x50 40x50 40x54 40x54 40x54 60x53 60x53 60x23	24 x 30 24 x 30 24 x 30 24 x 30 28 32 28 32 28 32	24x30 23x40 33x40 40x50 40x50 40x50 40x50 40x50 40x50 5 7.50/15 5 8.00/20	44x44 44x44
		Steering		Hyd	11111111111	Wee Co	HANNAHANAN	Hyd
		Clutch—Type		555	55555577777555	2222 2	***********	22
TRANSMISSION		Range in Forward Speeds (Mph)	113 4 46 88 3 30 88 3 30 88 3 30 89 3 72 99 3 72 99 3 73 99 3 73 19 3 73 19 4 30 114 4 30 114 4 30 114 4 30	2.00-13.00 2.00-13.00 2.00-13.00	.50 5.30 .50	1.00 2.50 1.00 2.50 1.00 2.50 1.00 2.50	2.00 4.40 1.90 4.20 1.90 4.20 1.00 4.50 1.00 4.50 1.00 4.50 1.00 4.50 1.00 4.50 2.50 12.00 2.50 12.00 2.50 14.50 2.50 14.50	50 5.50
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	speed	No. of Forward S	22222222222222222	444	44444	*****	000000000000000000000000000000000000000	
		Max. Brake Hp.	36 2200 76 1650 76 1750 76 1750 77 1650 77 1650 76 1750 76 1750 77 1400 80 1750 80 1750 80 1750 80 1750 80 1750 80 1750 80 1750 80 1750 80 1750	48-1800 52-1800 45-1600		888858	12 2000 25 2000 29 2000 52 1800 45 2000 61 2200 57 1300 56 1300	RR
		Displacement (Cu. In.)	154.0 272.0 141.9 149.9 149.9 272.0 272.0 272.0 440.9 440.9 440.9 440.9 272.8 272.8 272.8 272.8 272.8 272.8 272.8 272.8 272.8	244.0 230.0 216.0	112.0 112.0 162.4 226.0 226.0 226.0 320.0 339.0 339.0 525.0	23.0	53.9 53.9 111.7 230.0 162.0 157.0 157.0 157.0 216.0 283.0	244.0
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		Make and Model	Ferd 2015  Ferd 2015  GM 1406  GM 3015  GM 1406  GM 3015	Cont F244 Chr Ind 30 01 177D	Cont Y112 Cont F182 Cont F288 Cont F	BS Wis Wis Wis	Wis TF Wis VI-17 Cont VI-12 Cont VI-12 Cont Cont Cont Cont Cont Cont Cont Cont	Cont F244
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COMPRE Ib. in.		sundriW teallad	1011 1381 1381 1871 1871 1871 1871 1871 3841 3841 3841 3841 3841 3861 3861 3861 3861 3861 3861 3861 386		1071 1381 1391 2201 1861 1531 1531 1531 1531 1531 1531 1531 15	531 781 781 1301	105 105 102 1150 1150 1150 1150 1166	373
WEIGHTS (Lb.)		With Water feeling	10052 16523 16523 24283 27306 27306 19695 19695 19695 25122 25600 26600 26600 26600 26600		105102 123102 16100 20520 24177 16000 274952 312952 308262 308262 308262	4500 5300 6750 8100	6000 6000 10350 117500 17600 24420 24420 24420 24470 50000 50000	26530
WEI		Mithout fealing	6848 11623 11623 16468 16468 20092 20082 20082 20062 20062 20062 20062 24040 24040 24040	6550 6550 6550	6450 8250 12200 16740 16815 21140 17065 27370 22900 32000 32000	2900 2900 3800 4800 6325	4786 4785 7130 7130 11700 11750 117530 7170 8270 6650	21250
		Type	PT Tan natural	RT	Tan Tan Tan Tan Tan	Tan Tan Tan	PPT TTT TTT TTT TTT TTT TTT TTT TTT TTT	WI
	MAKE	MODEL	31-6 Ton 6-8 Ton 6-8 Ton 6-8 Ton 10-14 Ton 10-14 Ton 10-12 Ton 10-	8888	3-5 Ton 4-6 Ton 8-10 Ton Std. 8-12 Ton Std. 10-14 Ton Std. 10-14 Ton Ton 10-14 Ton HD 10-14 Ton HD 10-14 Ton HD 10-14 Ton HD 10-14 Ton HD 10-14 Ton HD 10-15 Ton HD 10-16 Ton	91-A 91-A 82-A 82-A 387- 387-388	60 C C C C C C C C C C C C C C C C C C C	Chief 10/13 Ton 20" Chief 10 Ton 20"
			Austin-Western	Browning	Buffalo-Springfield	O. H.	Ferguson	Gallon

F244 6.3 (x44) 2.44.0 79 1 1 50-5.50 TC Hyd 44x44 69x24 84 208 84 81 18 170"

Chief 10/14 Ton 24" TW 21740 28120 321 418 Cont

County   C						
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Cutil 19 11 Trong 19 1 Warrier 2 Warri	244554455545455454545454545454545454545	2222422222	127665456	9888	8822	>
Chief 12 (no. 24 - TW 21740 2200 220 240 52 1	99.24 99.24 99.23 99.23 99.24 99.24 99.24 99.23 99.23 99.23 99.20 99.20 99.20 99.20 99.20 99.20 99.20 99.20	48x42 53x50 60x54 60x54 69x20 69x20 69x20 69x20	52x50 52x50 60x54 46x18 48x18 55x18 60x20	15.00	7.50	
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Chief 10.14 Ton 24° TW 21610 20110 457 561 Cont Fra4 6 2	244.0 244.0 244.0 244.0 244.0 244.0 244.0 162.0			175.0 193.0 281.0		Her Light
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Chief 10 14 Ton 24" TV Chief 10 Ton 24" TV Chief 12 Ton 24" TV Chief 12 Ton 26" TV Chief 12 Ton 24" TV Chief 12 Ton 24" TV Warrior 7 Ton 18" TV Warrior 7 Ton 18" TV Warrior 8 Ton 20" TV Warrior 8 Ton 2 Axie To Ton 2 Axie Ton 2 Axie To Ton 2 Axie Ton 3 Axie Ton 2 Axie Ton 3 Axie	321 467 4409 4409 4409 273 273 273 276 286 286 286 130 1130 1144 1144 1144 1144 1187 230 230 230 230 230 230 230 230 230 230	2240 2240 243 343 343 368 469	123 210 181 141 155 223 280 352	900	85 93 93	
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		Huber-Warco	Ingram	Seaman-Gunnisc	Tampo	ABBI  1—Drive roll. 2—With wet sur 3—Drive roll with

Roller Shipments

956	Value 22, 991, 000 5, 016, 000 2, 251, 000 9, 595, 000 3, 445, 000 2, 684, 000
	5,952 5,952 609 2,040 1,481
1957	Value 22, 327, 000 4, 904, 000 2, 103, 000 9, 017, 000 3, 890, 000 2, 487, 000
	Units 5,488 635 1,803 1,537

Value 19.902.000 4.127.000 1.298.000 8.206.000 2.855.000 3.416.000

5.668 642 438 1.327 1.395

Three-wheeled, self-propelled Portable, self-propelled Tandem, self-propelled Tandem, self-propelled Tamping and Sheepsfoot Preumatic, drawn

Source: Industry Division, Bureau of the Cens

Chief 10 Ton 20° TW 20600 500 Conf. Conf. F244 6 3,445 2 244.0 70 1 1 1 50 5.97 TC Hyd 4444 68x20 76 208 76 81 18 170°

58

# Integral Front-End Loaders

(Lb.)	llu9 100	Waximum Draw	28910 28910 3000 3000 3000 3000 3000 3000 3000 3
		Brake Type	\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$iiiii\$\$\$\$i\$\$\$\$\$iiiiii\$\$\$\$
	poac	Max. Reverse Sp. (Mph.)	44880000000000000000000000000000000000
TRANSMISSION	pood	Max. Forward S (Mph.)	886748888888888888888888888888888888888
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-		Type of Fuel	
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ENGINE		MAKE AND MODEL	HD344 HD518 HD518 HD518 HD518 G118 G118 G118 G118 G118 G118 G118 G
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(3)	Shoe (In	Track—Width of	2988
	(,308	Lowering Time (	00000000000000000000000000000000000000
		Raising Time— Loaded (Sec.)	は名とののののののののできてんとてからののとことできるのののはおおおのののできってイネットとうののとことであるのののののできました。 ちららりのしゅん ちゅうしょうしょうしょうしょうしょうしゅう ロロロック ロロロロック ロロロロック
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		Clearance Under Hinge Pin (In.)	120 120 120 120 120 120 120 120 120 120
BUCKET	Bu	Maximum Dumpi Clearance (In.)	989 989 989 989 988 988 988 988
BU		Carrying Capacity (Lb.)	\$500 \$1,000
	(·q7	Lifting Capacity (	11000 11000
		Width (In.)	974 111119 11111
		(Cu. Yd.) Capacity—Struck (Cu. Yd.)	#### #################################
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3	nd ,beoi	Ground (In.) Weight (Ib.)—No	2.29
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SNO		Wheelbase (In.)	88 88 88 88 88 88 88 88 88 88 88 88 88
FINSIONS	LENGTH (In.)	Bucket at Carrying Position	188 1156 1156 1156 1156 1156 1156 1156 1
L DIN	LE	Bucket on Ground	118
OVERALL DIME	H.	Outside Front— Tires or Tracks	78 554 554 554 554 554 554 554 554 554 55
٥٨	WIDTH (In.)	Outside Rear- substit to seriT	100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	,Juio4	Height—Highest Bucket at Ground Level (In.)	6.6
		Type	***************************************
			HD-66 HD-166 HD-
	2	MODEL	Allia-Chalmers  Gae  Case-Terratrac  Caterpillar  International-Drott  Michigan  Oliver  Payloader  Scoopmobile  Scoopmobile

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<b>-</b>	ABBREVIATIONS sel engine also available including exhauet pape
	BREV ne also ng ext
otive	AB el engi meludi
Tractomotive	2—Not 1

WALCS 124 G TC 4 4 19.5 24.0 H 15330

# Bottom, Front, Rear Dumpers

C32
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see
manufacturers,
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addresses
For

		WEIG	WEIGHTS (Lbs.)	CA	CAPACIT	TIES		E	ENGINE						TRANSMISSION	MISSIM	NO				(S)	TIRES (Size and Ply)	_	OVERALL	SNC
				(	(-			(Jn.)		.10	e				Œ	Ratios (To 1)	(101)		1			-			-
MAKE AND MODEL	Type	Complete Unit—	Complete Unit-	Struck (Cu.Yds.)	Heaped (Cu.Yds	(enoT) bsolveQ	Make and Model	No. of Cylinders Bore and Stroke	Displacement (Cu. In.)	Brake Horsepow	uproT mumixaM .M.9.R Is	Fuel Used	Type	First	Second	bridT	Fourth	Fifth	Reverse Clutch Type	Steering Type	Front	Rear	ฝุ <sub>่</sub> มีถึนอ <b>ำ</b>	Width	trigiate
Allis-Chalmers TR-260 TW-360	RD	44500	80500	17.0	15.0	18.0 Own 26.0 Own	TD844	6 5 4 x6 2	844.0	200 2000 280 2100		00	Conv	22.24	3.27	78	00 00	6.6	49 DPD 49 SPD	D Hyd	21x25 24x29	24 21x25 24 24 24x29 24	35'11'2"	10.10"	10.3
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pehring W50	FD	16300	32800	5.3	6.3	8.3 GM	4-71	4-41 <sub>4</sub> x5		109 1800	360 1100	0	Conv 6	65.00 3	35.50 18.	30 N	Z	(8)	SPD	D Hyd	16x25	16 10x20 12	14.7"	8.45 5	6.0
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oedridge CWD-321	88	64000	134000	21.0	31.0	35.0 Cum 25.0 Cum	NRT6 MRS6			300	810	00	Conv					8			14x24 16 24x25 24	29.5x29 24x25.24	28 35'3"	11.10"	11/4"
uba-Movall R020, R015 R0360-AC R075-IM R055-IM	55555	35000 23340 35000 35000 23340	99000 67340 99000 99000 67340	120000	25.0 25.0 16.0	32.0 Cat 22.0 Cat 32.0 AC 32.0 Int 22.0 Int																	25.3° 25.3° 19.0°	11.0	104 104 104
ABBREVIATIONS  Torque convertor optional.  2.— Two reverse speeds		Aut	AC-Alberthalters Mfg. ( Auth-Astronatic SO-Easton dump	lin.	MIg. (	Co.	Cum-I	Conv—Conventional.  Com—Conventional.  D—Dresd oil.	sel Eng	int Ca.	Ele	D-Do	DPD—Double plate, operating dry Ele—Electric FD—Front damp.	e, oper	ating d	100	TEN	-Inter	Hyd-Hydraulic. Int-International N-No or none.		Barvester Co.	SPO	SD—Side dump. SP—Single plate. SPO—Single plate, operating dey.	operating	dry.

600RP Die

Model	Type Air Deliver Operating Maximum Compresso Engine
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For addresses of manufacturers, see page C32

# CHICAGO PNEUMATIC

Model	75 PG-20	125 RG-2	210 RG-2	210 F.O-2	365 RO-2	6C0 RO-2	S00 RO-2
Type Air Delivery @ 100 psi (Cu. Ft. Min.) Operating Pressure (Lb.)	Gas 75 100	Gas 125 100	Gas 210 100	Die 210 100	Die 365 100	Die 600 100	900 100
Maximum Discharge Pressure (LD.) Compressor Speed (RPM)	1550	1800	1900	1900	1775	1750	1775
Make Model Number of Cylinders	Her IXLB	Her GO-226	Her GO-339 6	GM 4-51	GM 4-71	GM 6-71	Cum NRTD 6 B1
Morsepower (@ Governed Speed Capacities							
Crankcase (Qt.)		********					
Radiator (Qt.)		and and the same	********				********
Tire Size	7/44/77/4	********				********	*******
Front	1444444	********		********		********	
Dimensions (In.)				1111111111			*******
Length Width Weight	1161,51 521,1 531,1	1501 68½1 661	1621,1 681,1 801,1	162 <sup>3</sup> 4,1 68 <sup>3</sup> 4,1 80 <sup>3</sup> 4,1	132%,2 6634,2 912	1581/22 711/22 971/32	1741/2 781/2 1001/2
Cum—Cummins Engine Co., Inc.  Gas—Gasoline.  GM—General Motors Corp.	Her I	Her Hercules Motor Co.	2 On four wheels.	wheels.			

## DAVEY

Model	75-WBD	125VD		160WD	21CWDS	315WDS
Type   Gas   GD	Gas 3 3 75 100	GD 2 445445 745445 125 100	Gas 128	GD 8.33% 8.3,433 160 100	3 3 3 7 3 3 4 5 2 10 2 2 10 0 100	GD 814.x4 6x4 316 100
Art Storage Capacity (Cu. Ft.)	135	-10		832	2,60	10%
Make Model Aumber of Cylinders	Wis VG-4	Heri QXD-51 61		Her <sup>3</sup> QXLD 6	Her <sup>3</sup> JXLD 6	Hert RXLD <sup>6</sup>
Threspower its Jovernal spread Displacement (OL In.) Governal Speed (RPM)	1800	230.01		236.7	339.0	558.0 1600
Chankesse (QL) Chankesse (QL) Cuel Tank (Gal) Cuel Tank (Gal)		8 20 20 20		30	40	40
I FORT	6.00,16	6.00/16		7.50/16	7.50/16	7.50.16
Dimbrashis (TL.) Dimbrashis (TL.) Width Weight	72 48 52	1552 622 581-52		1472 752 702	1532 752 702	1422 752 812
Die-Diesel, Gas Gasoline, GD Gasoline or Diesel, Her Herrules Mote	or Co. Wis Wisconsin	Motor Corp. 1-In-	Continental engines available.	4. International or GA	International or GM Diesel sugines available.	6 DRXC Dresel engin

## **QUINCY**

Model	T-216	T-230	T-240	T-244	T-255	T-310	T-325	T-340	T-350
Type	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
High Pressure Cylinder	3x21/2	3x21/2	4x3	4x335	41.2x31.2	24215	23.5x3	3x31/2	314x314
Displacement (Cu. Ft.)	18.4	30.0	39.8	45.0	58.0	10.0	21.0	31.0	40.0
Operating Pressure (Lb.) Compressor Speed (RPM)	800	800	006	800	8/0	730	280	700	200
Engine Horsepower Tire Size	5.50/16	5,50/16	5,50/16	5,50/16	5,50/16	5.50,16	5.50/16	5.50/16	5,50/16
Dimensions (in. Length Width Weight	8378 42 4215	837s 42 443.5	8378 40 4436	637.6	837s 42 52	8378 421	8378 42 4458	837% 42 49%	837 8 42 52
		1							

Model		20	35	75	125	125	250	250	315	315	909
Type  Bore and Stroke (In.) (No. of Cylinders) High Pressure Cylinder Low Pressure Cylinder Air Delivery © 100 psi (Cu. Ft. Min.)		Gas 2 3x31 <sub>4</sub> 20	Gas 314x4 314x4 35	Gas 2 4 1 x 4 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Gas 3 3 4 4 5 5 5 5 5 6 7 7 7 8 7 8 7 8 8 7 8 7 8 7 8 7 8 7 8	Die 3 4 14 14 14 14 14 14 14 14 14 14 14 14 1	Gas 6 45x43x 250x43x	Die 6 4 4 5 x 4 3 4 4 5 x 4 3 4 2 5 x 4 3 4 2 5 x 4 3 4 2 5 0	Gas 5x6 5x6 316	Die 8 5 8 6 3 1 5	55°,x6
Engine Make Model Number of Cylinders Horsepower (@ Governed Speed Displacement (Cu. In.) Governed Speed (RPM)		2 934 1800		COUF 3 3 29 143 1470	Own COUH 3 41 228.6 1370	0wn DOUH 3 41 226.6 1370	Own GOHD 6 85 453.0 1350	Int UD-14A 6 88 461.0 1350	Buda 6MO-779 6 129 779.0 1180	UD-18A 6 116 691.0	100-1091 6 180 1090-6 1200
	Int-Internation	38551 281 3454 Int-International Harvester Co.			821 271 405 61	821 271 40%	1381 481 531 <sub>4</sub> 1	1381 481 53141	1681 601 61½21	1641 601 61½1	203 <sup>1</sup> 72 <sup>1</sup> 70 <sup>1</sup> 4 <sup>1</sup>
JAEGER					WORT	WORTHINGTON	z				
Model	R125-5	DR25C-6	R365-7	R600-7	Model				210	315	009
Type Air Delivery 67 100 psi (Cu. Ft. Min.) Operating Pressure (Lb.) Maximum Discharge Pressure (Lb.) Compressor Speed (RPM) Engline Fighte	Gas 125 100 1700 Cont.	256 100 1700 GM		Die 600 126 125 7650 GM	Type Number of Cylind Air Delivery (6) 16 Operating Pressu Maximum Discha Compressor Speec	Vipe  Vumber of Cylinders of Compressor  Alr Delivery (6 100 psi (Cu. Ft. Min.)  Doestling Pressure (Lh.)  Maximum Dischage Pressure (Lb.)  Gompresser Speed (RPM)	Gas 75 75 1700		22 210 120 120 180 180 5 <sup>3</sup> <sub>4</sub>	Die 2 315 315 126 126 1800 16	2 600 100 125 1800 14½
Model Number of Cylinders Number of Cylinders Capacities Crankcase (Qt.)	511%	3-1		20 20	Engine Make Model Number of C	nne Make Model Number of Cylinders Horsepower @ Governed Speed	Cont F-124 4 28%		Cont <sup>2</sup> M-330 <sup>2</sup> 6 <sup>2</sup> 78 <sup>2</sup>	GM*	GM 6-71 180
Radiator (Qt.) Tire Size Frent	21 20 6.00.18	52 38 9.00/16	47	88 88	Capacities Crankcase (Qt.) Radiator (Qt.) Fuel Tank (Gal.)	(Qt.) k (Gal.)	13		38 88	288	24 46 100
Dimensions (In.) Length	8.00/16 961	1145	132	156	Front Rear		6.00/1	8.00/16	6.00.16	6.50/16	7.50/16
nental Motors Corp. Gas-Gasoline.	GM General Motors Corp. 1—Skid mounted.	70)21 orp.	721	801	Length Width Width Height		1261 691.61 601.51		1113 623 733	1297 723 843	1523 823 933
INGERSOLL-RAND								Cont—Cont GD—Gasol	tinental Motors Cor line or Diesel, GM	p. Die Diesel. C	as Gasoline Corp. Mer
Model		GR-85	GR-125	GR-210	GR-315	GR-600	0 GR-900	9C0 Mutors 4-5	14 ryl. 61 hp. Diesel	engine available.	Four wheel
er of Cylinders of Compressor		Gas	QD	Q9	CD	Die	Die	5 Hercule 6 Two wh	eel mounted 521/2 w	53 hp. Diesel eng th Diesel engine.	ne available. Four wheel
divery (d. 100 psi Cu. Ft. Min.)		82	125	210	315	009	006	mounted 13	37 with Diesel engin		
Maximum Discharge Pressure (Lb.) Compressor Speed (RPM) Air Storage Capacity (Cu. Ft.)											
Engine Make Metel Anders of Patriceles		Cont F-140	Cont GD-1572	GM3 4-513	GM4	GM 6-71	GM 6-110				
Number of Cympers Horsepower (a Governed Speed				1	79	0	0				
Crankcase (Qt.) Radiator (Qt.) Fuel Tank Gal.)											
Tire Size Front Rear		5.00.15	8.00.16	6.00.16	6,50,16	7.50 16	7.50.20	0.0			
Dimensions In. Length Width		361	36161	113161	127151	156341	1771				

522

4818

445%

421

52

A 46 20 A

4475

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4218

958

#### For further equipment information, write . . .

#### AIR COMPRESSORS

Chicago Pneumatic Tool Co., 6 E. 44th St., New York 17, N. Y. Davey Compressor Co., Rotary Drill Div., 600 Franklin Ave., Kent, Chicago Preumans.
Davey Compressor Co., Rotary Drin David,
Ohio Legar Machine Co., 550 W. Spring St., Columbus 16, Ohio Legar Machine Co., 550 W. Spring St., Columbus 16, Ohio Legar Div., Westinghouse Air Brake Co., Milwaukee 1, Wis. Quincy Compressor Co., 217 Maine St., Quincy, Ill. Schramm, Inc., West Chester, Pa.
Worthington Corp., Holyoke Div., Holyoke, Mass.

Allis-Chalmers Mfg. Co., Milwaukee 1, Wis.
J. I. Case Co., 700 State St., Racine, Wis.
Caterpillar Tractor Co., Peoria 8, Ill.
Deere & Co., 3300 River Drive, Moline, Ill.
Euclid Div., General Motors Corp., 1361 Chardon Rd., Cleveland 17,
Obio. Ohio
International Harvester Co., 180 N. Michigan Ave., Chicago 1, Ill.
The Oliver Corp., 400 W. Madison St., Chicago 6, Ill.

#### DUMPERS

Allis-Chalmers Mfg. Co., Milwaukee 1, Wis. Euclid Div., General Motors Corp., 1361 Chardon Rd., Cleveland 17, Ohio
Koehring Co., 3026 W. Concordia Ave., Milwaukee 16, Wis.
LeTourneau-Westinghouse Co., Peoria, Ill.
Wooldridge Div., Continental Copper & Steel Industries, Inc., Hendy
Ave., Sunnyuale, Cal.
Yuba Mfg. Co., Benicia, Cal.

#### ENGINES

Allis-Chalmers Mfg. Co., Milwaukee 1, Wis.
Caterpillar Tractor Co., Peoria 8, Ill.
Continental Motors Corp., Muskegon 82, Mich.
Cummins Engine Co., Fifth & Union Sts., Columbus, Ind.
Cutroit Diesel Engine Div., General Motors Corp., 13400 W. Outer Dr.,
Detroit Z8, Mich.
Ford Motor Co., American Rd., Dearborn, Mich.
Hercules Motors Corp., 101 Eleventh St. S.E., Canton 2, Ohio
International Harvester Co., Construction Div., P. O. Box 270, Melrose
Park. Ill. Park, III.

The Oliver Corp., 300 Lawler St., Charles City, Iowa
P & H Diesel Engine Div., Harnischfeger Corp., 500 S. Main St.,
Crystal Lake, III.

Waukesha Motor Co. (Roiline, Waukesha), W. St. Paul Ave., Waukesha, Wis.

#### GRADERS

Allia-Chalmers Mfg. Co., Milwaukee 1, Wis.
Austin Western Works, Construction Equipment Div., Baldwin-Lima-Hamilton Corp., 601 Farnsworth Ave., Aurora, 111.
Caterpillar Tractor Co., Peoria 8, III.
Caterpillar Tractor Co., Peoria 8, III.
Caterpillar Tractor Co., Co., Galion, Ohio
Huber-Warco Co., 202 N. Greenwood St., Marion, Ohio
LeTourneau-Westinghouse Co. (Adams), Peoria, III.
Pettibone Mulliken Corp., 4700 W. Division St., Chicago 51, III.

#### FRONT END LOADERS

Allis-Chalmers Mfg. Co., Milwaukee 1, Wis.
J. I. Case Co. (Terratrae), 700 State St., Racine, Wis.
Caterpillar Tractor Co., Peoria 8, III.
Clark Equipment Co., Construction Machinery Div. (Michigan, P. O.
Box 599, Benton Harbor, Mich.
Euclid Div., General Motors Corp., 1361 Chardon Rd., Cleveland 17,
Ohio Frank G. Hough Co. (Payloader), Sunnyside Ave., Libertyville, III.
International Harvester Co., 180 N. Michigan Ave., Chicago 1, III.
Mixermobile Manufacturers Inc. (Scoopmobile), 8027 N. E. Killingsworth St., Portland 20, Ore.
The Oliver Corp., 400 W. Madison St., Chicago 6, III.
Pettibone Mulliken Corp. (Speedall), 4700 W. Division St., Chicago 51, III. Ill. Tractomotive, Deerfield, Ill. The Yale & Towne Mfg. Co. (Trojan), Batavia, N. Y.

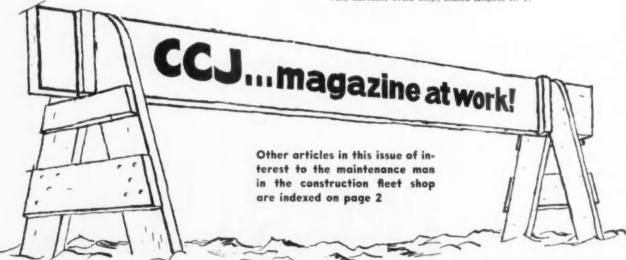
#### POWERED ROLLERS

Acme Iron Works (Ingram), P. O. Box 2020, San Antonio 6, Texas Austin Western Works, Construction Equipment Div., Baldwin-Lima-Hamilton Corp., 601 Farnsworth Ave., Aurora, Ill., Browning Mfg. Co., P. O. Box 2707, San Antonio 6, Texas Buffalo-Springfield Roller Co., 1210 Kenton St., Springfield, Ohio C. H. and E. Mfg. Co., 3849 N. Plamer St., Milwaukee 12, Galion Iron Works and Mfg. Co., Galion, Ohio Huber-Warco Co., 202 N. Greenwood St., Marion, Ohio Seaman-Gunnison Corp., 2763 S. 27th St., Milwaukee 15, Wis. Shovel Supply Co. (Ferguson). Box 1369 Dallas 21, Texas Tampo Mfg. Co., P. O. Box 2340, San Antonio 6, Texas

Allis-Chalmers Mfg. Co., Milwaukee 1, Wis. Caterpillar Tractor Co., Peoria 8, Ill. Euclid Div., General Motors Corp., 1361 Chardon Rd., Cleveland 17. Ohio
International Harvester Co., 180 N. Michigan Ave., Chicago 1, Ill.
LeTourneau-Westinghouse Co., Peoria, Ill.
The Oliver Corp., Cleveland 17, Ohio
Seaman-Gunnison Corp., 2763 S. 21th St., Milwaukee 15, Wis.
Wooldridge Mfg. Div., Continental Copper & Steel Industries, Inc.,
Hendy Ave., Sunnyvale, Cal.

#### HEAVY-DUTY TRUCKS

Crane Carrier Corp., P. O. Box 5008, Tulsa, Okla.
Dart Truck Co., 2623 Oak St., Kansas City 8, Mo.
Dodge Division, Chrysler Corp., Detroit 31, Mich.
Duplex Div., Warner & Swassy Co., 830 E. Hazel St., Lansing 4, Mich.
Euclid Div., General Motors Corp., 1361 Chardon Rd., Cleveland 17, Euclid Div., General Motors Corp., 1361 Chardon Rd., Cleveland 17, Ohio P.A.B. Mfg. Co. (Fabco), Oakland 8, Cal. Federal Motor Truck Co., Detroit 9, Mich. Ford Div., Ford Motor Co., Dearborn, Mich. Four Wheel Drive Auto Co., E. 12th St., Clintonville, Wis. GMC Truck & Coach Div., General Motors Corp., 660 S. Blvd. E, Pontiac 11, Mich. International Harvester Co., 180 N. Michigan Ave., Chicago 1, Ill. Kenworth Motor Truck Co., 8801 E. Marginal Way, Seattle 8, Wash. Mack Mfg. Corp., 1355 W. Front St., Plainfield, N. J. Oshkosh Motor Truck, Inc., 2300 Oregon St., Oshkosh, Wis. Peterbilt Motors Co., 107th Ave. & MacArthur Blvd., Oakland 5, Cal. Reo Motors Div., White Motor Co., 1331 S. Washington Ave., Lansing, Mich. Reo Mich. Mich.
Truckstell Mfg. Co., Cleveland 14, Ohio.
Walter Motor Truck Co., Ridgewood, L. I., N. Y.
Ward LaFrance Truck Corp., Elmira Heights, N. Y.









FIRST NAME IN TIRE VALVES

FOR ORIGINAL EQUIPMENT AND REPLACEMENT

0.

ille,

Wis.

Cal.

958



Mack Thermodyne® Diesel engines have the highest thermal efficiency in the field, as proved by their matchless fuel economy, long mileage life and peerless performance. They're a prime reason for Mack's long lead in the sale of Diesel trucks since 1953.

Mack transmissions run far longer, need less attention than any others, thanks to the famous Mack metallurgy, painstaking precision, and exclusive Tetrapoid gear design that gives maximum strength, durability and quietness.

Mack brakes are famed for their dependable action and durability. Brake lining areas are designed for maximum heat dispersion, minimizing brake fade, and Mack-built drums give longer life.

Mack clutches are unique for long facing life, for smooth action and minimum pedal effort. Only Mack clutches, for instance, use up to 36 springs to distribute pressure evenly over the pressure plate . . . or offer the exclusive Vibrasorb-driven plates for vibrationless action.

Mack axles achieve maximum road strength with minimum weight in carriers, banjo housing and differentials. Mack axle shafts with exclusive involute splines have 25% greater endurance, size for size, and four times the shock resistance of any others.

Mack Model B cabs offer unitized caband-front-end construction . . . are diamond-mounted on rubber cushions.
All components remain in line, unaffected
by road shock. Cabs ride more quietly,
keep their rugged good looks. Rattling
and squeaking are eliminated.

Ask a Mack user-soon-to substantiate these 6 basic points. Mack Trucks, Inc., Plainfield, New Jersey. In Canada: Mack Trucks of Canada, Ltd.

MACK
first name for
TRUCKS

86

#### KEY TO DEFINITIONS

#### MAKE AND MODEL

Only Domestic Truck Models are

#### OPTIONAL UNITS.

For the express purpose of best fit-ting the truck to the individual job ting the truck to the individual job most of the models listed can be pro-vided with optional engines, trans-missions, axies, etc., and these mod-els when so equipped are considered standard stock models.

#### CHASSIS LIST PRICE

The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

#### RECOMMENDED GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published here-with are those supplied by manufac-

turers as their Recommended Gross Vehicle Weights for Normal Operat-ing Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or de-crease the gross vehicle weight rating crease the gross vehicle weight rating when either favorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's be obtained from the manufacturer's representative.

#### CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with coul, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in

the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

#### STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price,

#### MAXIMUM AUTHORIZED TIRE SIZE

THE SIZE

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost, if it differs from the standard size. Dual rears are understood; exceptions noted.

#### MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

#### MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

#### MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamom-eter reading without accessories.

#### GEAR RATIO RANGE

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptious are noted.

#### TRACTORS

Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated

#### KEY TO ABBREVIATIONS

#### MAKES-ALL

All—Allison Div., General Motors Corp. B—Beudix. BL—Brown-Lipe. Bu or Bud—Buda, BW—Bendix-Westing-

C—Chevrolet.
Cl or Cla—Clark.
Con—Continental.
Cu or Cum—Cummins-

Diesel,

Deu—Deutz Air Cooled

Diesel engine.

Eat—Eaton.

F—Ford.

Fu—Fuller.

G-H-Goodyear-Hawley type. GMC—General Motors

Corp. -Hotehkiss.

Her—Hercules. HS—Hall-Scott. Int .- International

I.—Lockheed.
LeR—LeRol.
LH—Lockheed front,
Wagner "bi-Tork" rear.
I.T.—Lockheed type front
Timken rear.
I.W—Lockheed front,
Wisconsin rear.
M—Midland.

-New Process. N.P. O or Ow-Own. Op or Opt.—Optional. Shu—Shuler.

Shu-Spiof Tim—Timken-

Detroit Axle Co.

Tw—Timken-Detroit—
Westinghouse.

TW—Timken-Detroit—
Wisconsin.

Wisconsin.

Var—Varlable.

WG—Warner Gear.

Wau—Waukesha.

W or Wis—Wisconsin.

W-B—Wagner or Bendix.

WE—Wagner Electric.

Wg—Wagner "hi-Tork."

Ws-Westinghouse. WW-Westinghouse or Wagner

#### REAR AXLE

Final Drive and Type

inal Drive and Type
B—Bevel.
CD—Chain Drive.
F—Full-floating.
H or Hy—Hypoid.
d—Dual range axle.
2—Double Reduction.
S—Spirat bevel.
W—Worm.
¼—Three Quarters
Floating.
⅓—Semi-Floating.

T-Torque Tube.

#### GEAR RATIOS

(\*\*)—Only one ratio.

Drive and Torque
H—Hotchkiss (springs)
R—Radius Rods.
L—Parallel Torque Rods.
T—Torque Arm.

#### GOVERNOR STANDARD

#### KEY TO REFERENCES

c.f.—Cab Forward design. c.e.—Cab-Over-Engine

ns.

ed

ly,

design.

—Low cab forward Lc.f.

I.c.f.—Low cab forward design.

(D)—Diesel-engine equipped.

(T)—Designed for tractor use only.

(C)—Ford or Chevrolet Models.

(R)—Remanufactured Fords.

Denotes "Includes Cab"
when used with
weights or prices.

CHEVROLET

-11.00/22 also available.

†-283 V-8 Trademaster engine available. ††—283 V-8 Taskmaster DIVCO

engine available.

2—283 V-8 Super Taskmaster 4 barrel carburetor engine available.

able.

Overdrive optional.

Powerglide available.

Heavy duty 3 speed
transmission available. 4 speed transmission

available.

Hydramatic available. 5 speed New Process transmission available.

#### COLEMAN

Fu5.465 or Spicer 6352
 also available.
 Cum HRB600 also
 available with horsepower of 165-1800.

\*-Front only; rear, 7.50/ 168

105. +—Front only; rear, 7.50/ 208. -—Front only; rear, 8.25/ 168.

Front only; rear, 7.50/ 20D.

#### DUPLEX

\$—Torque Divider, Timken T70-2 speed.

#### FARCO

\*-With 2-speed transfer

case.
With 3-speed auxiliary
and 2-speed transfer

case.

RC—Chevrolet axle remanufactured.

RF—Ford axle remanufactured.

Also available with tan-dem rear axle.

\*-Other options available.

\*—Models available with tilt cabs.

♦ Timken TK-500 PA Trailing Axle. †—14.00/24, front: 16.00/24, rear. ‡—Optional transmission. •—C.O.E. optional. •—One man cab. One man cab.

-Torque converter plus Torquematic transmission optional.

Both C.O.E. and cab beside engine optional.

†+-14.00 24 front:

† 14.00:24 front; 18.00:25 rear. \* Cummins NHRBSID 600. ‡ Allison TCL 654 plus TG 607, \* 1148. \$ -1108.

#### MARMON-HERRING-

\*—Three-speed trans. opt. †—Five-speed trans. opt.

#### OSHKOSH

-Includes cab.
-1091 cu. in.
-Hydraulic coupling optional.

Dependent upon engine.

Model OA-145 and 331-OA LPG engines can be furnished.
 Two speed axle avail-

able.
2—Model 255-OA-LPG or OA-130 engine can be furnished.
2—OH-170 or OH-160 LPG

can be furnished. OH-160 LPG engine

Model OV-235 or OV-220 LPG engine can be furnished.
 OH-170 or 330 OA-LPG or OH-160-LPG engine can be furnished.
 331-OA or 331-OA-LPG or OH-160-LPG engine.

#### ean be furnished. Rear only; front, 11.00-20.

\*\*STUDEBAKER

- Two speed 5.93-8.10 or 6.48-8.80 optional,
- Two speed 6.16-8.48 or 6.61-9.09 optional.

TRUCKSTELL speed power di-

With 3 speed power divider.
 Weight with cab and maximum tires.

#### WARD LA FRANCE

rear axles.

Available with 11.00/22 Available with 11.00/22 or 12.00/20 tires for G.V.W. of 60,000 lbs and optional front and rear axles. Auxillary transmission, Fuller 3A65, 3B65, 3A92 and 3B92.

#### WILLYS Overdrive optional

#### SPECIFICATIONS BEGIN ON PAGE 90

# This *Automatic* your truck more

Now available in GMC, Chevrolet,
Dodge and Ford...Allison fully
automatic transmission pays for itself
well within the first 12 months
of operation

- "331/3% more payload per trip;" says West Coast contractor.
- "50% less engine maintenance;" reports Rocky Mt. trucker.
- "75% lower brake maintenance;" claims Utah ore hauler.
- "100 extra miles per day;" indicates Michigan car-haul.
- "3 trucks do the work of 4;" says New Jersey sand hauler.

Allison

# Brain" gives get up and go...

ALL over the country truck owners are acclaiming the Allison Automatic as the greatest transmission advance in 30 years. In every type of service—local and long distance—in city traffic and over the highway—in the deepest mud and the roughest road—the Allison fully automatic transmission is bringing America a new kind of truck.

With the Allison Automatic, your driver merely selects the range—the "Automatic Brain" does the rest. It "senses" the right gear for *every* combination of speed, load and grade. Shifting is automatic—exact—every time. Engines *can't* lug or race. Average elapsed trip time is decreased 18%. And direct-drive lockup engages in every forward gear for maximum fuel economy.

It multiplies engine torque up to 15 times—delivers maximum power right from a dead stop. It gets the load moving instantly—keeps it moving smoothly. It cushions the engine and drive line from costly shock damage—increases engine life 35%.

Its built-in hydraulic retarder permits faster—yet safer—descents on even the steepest grades. It slows your truck in traffic without touching the service brakes. And it cuts brake maintenance more than 50%.

The Allison Automatic is the first fully automatic transmission specially designed for medium and heavy-duty trucks. It's the first transmission that lets you take *full* advantage of today's high-torque truck engines. It was developed from more than 10 years' service in the heaviest military and off-highway vehicles.

GMC, Chevrolet, Dodge and Ford have engineered the Allison Automatic into their newest medium and heavy-duty trucks, school buses and other commercial vehicles. It is also available in an integral enginetransmission power plant with Chrysler and Ford industrial engines.

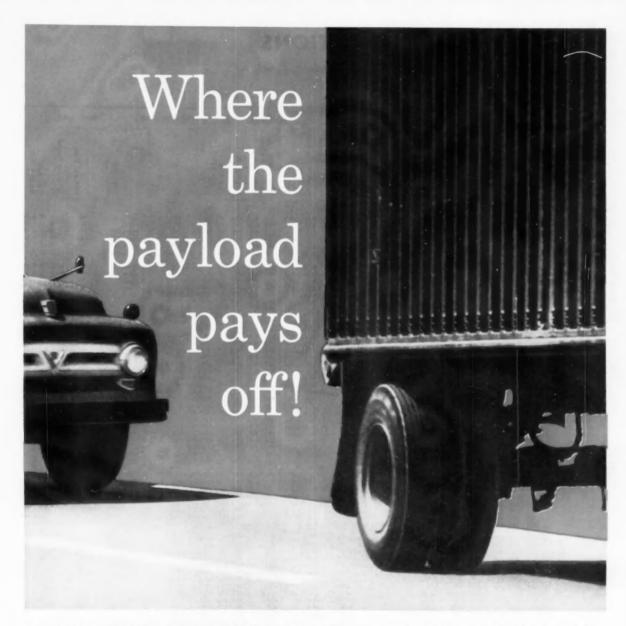
Find out how an Allison fully automatic transmission can repay its cost many times over in *your* operation. See your dealer or write:

ALLISON DIVISION OF GENERAL MOTORS, Indianapolis 6, Indiana

FULLY AUTOMATIC TRUCK / TOMS MISSIONS

Continued from page 87

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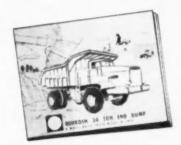
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	WHEEL- BASE			TIRE	SIZES		ENGINE D	ETA	ILS			TRANSMISSIO	ON	RE	AR A	CLE	
MAKE		Weight			ial rear igle rear											99	
AND MODEL	Minimum Standard Maximum Standard	58	Chassis Weight (See definition)	Standard Front and Rear	Maximum Authorized Tire Size (Duals unless noted)	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque Ib. ft.	Max. Brake H.P. at R.P.M. Given	Make and Model	Forward Speeds	Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
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#### SENSIBLE . HONEST . DEPENDABLE ... and ECONOMICAL

Volkswagen Light Trucks have all these virtues...outstanding gas economy...air-cooled engine...no radiator problems...sturdy construction that takes the bumps of rough terrain. Volkswagen has unusual visibility and ease of driving and parking. The Volkswagen Panel Delivery gives fleet operators a whopping big 170 cu. ft. of usable storage space. But above all, remember: a Volkswagen costs less to buy, run and maintain. This we can prove! Sales and Service in 48 states. Look for the Authorized Volkswagen Dealer with this member.

VOLKSWAGEN DELIVERS THE GOODS ... FOR LESS!





PANEL DELIVERY—carries 1830 lb. payload...loads from wide side doors as well as the rear loading door. Top and sides... front and rear give you a bonus in free space for distinctive advertising.



## VOLKSWAGEN

Continued from Page 94

	WHE				TIRE	SIZES		ENGINE D	ETAI	LS		*	TRANSMISSI	ON	RE	AR AX	LE	
MAKE	- UN	1	Weight			al rear gle rear								ls.			ant	
AND MODEL	Minimum Standard	Maximum Standard	Gross Vehicle for Normal Ser	Chassis Weight (See definition)	Standard Front and Rear	Maximum Authorized Tire Size (Duals unless noted)	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M Given	Make and Model	Forward Speed	Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
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For references and abbreviations see page 87

Continued on Page 98

## GETTING DOWN TO BRASS TACKS ON POWER BRAKING

... the overwhelming choice on trucks is vacuum power,

with Hydrovac\* leading all other makes combined.

Users prefer this kind of braking because

- —it does the job simpler
- -and better

with less first cost,

less expense for maintenance

and without compressor drain on engine power.

Then, by saving weight,

it can add several hundred pounds to pay load.

All this plus  $\dots$  the vital safety stand-by

of sure and dependable braking,

instead of "no power, no brakes"!

... It will pay to investigate

HYDROVAC (VACUUM HYDRAULIC) POWER BRAKING BY BENDIX

PREG. U.S. PAT. OFF.

Bendix PRODUCTS South Bend, IND.



Continued from Page 96

		EEL-			TIRE	SIZES		ENGINE D	ETA	LS			TRANSMISSIO	ON	RE	AR A	ULE	
MAKE			Veight			al rear gle rear		-									96	
AND MODEL	Minimum	Maximum Standard	Gress Vehicle Weight for Normal Service	Chassis Weight (See definition)	Standard Front and Rear	Maximum Authorized Tire Size (Duals unless noted)	Make and Medel	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Make and Model	Forward Speeds	Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
Studebaker — Cont'd 3E17 3E178 3E38 3E38 3E40 3E408		212 195	18000 17000 18000 19000	4185 4250 4280 4445	8/22.5D 8/22.5D 8/22.5D 8/22.5D 8/22.5D 8/22.5D	10/22.5 9.00/20 10/22.5 9.00/20 10/22.5 9.00/20	Own 4E Own 4E Own 5E Own 5E Own 6E Own 6E	6 34 x4% 6 34 x4% 8 34 x31 8 34 x31 8 34 x35 8 34 x35	246 246 259 259 289 289	7.5 7.5 7.5 7.5	204 250 250 288	106 3400 170 4200 170 4200 182 4000		4444	Tim E-102* Tim E-102* Tim E-102* Tim E-102* Tim F-146* Tim F-146*	HF HF HF HF	HHH	6.20 6.8 6.20 6.8 6.20 6.8 6.20 6.8 6.20 6.8 6.20 6.8
Vard La Fr. D-1 D-1C D-3 D-3S (D) D-5	149 149 149 149 149	220	29000 29000 29000	49500 410000 410000	10.00/20 11.00/20 11.00/20 11.00/20 11.00/22	11.00/20 11.00/22 11.00/22 11.00/22 11.00/22	Con T6427 Con T6427 Con R6572 Con R6602 Cum HB600	6-4-4 x47-6 6-4-6 x53-6 6-4-6 x53-6 6-4-6 x53-6 6-4-6 x53-6	572 602	5.1 5.9 5.9	440 463	152-2600 189-2600 198-2600	Ful 5A430 Ful 5A430 Ful 5C650 Ful 5C650 Ful 5C650	5	Tim Q-100 Tim U-200 Tim R-200 Tim R-200 Tim R-200	8 \$2 \$2 \$2 \$2 \$2	RRRR	** -6.8 ** -7.0 ** -7.8 ** -7.8 ** -6.4
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Duplex L-8602-4 LC-800-4	148				11.00/20 11.00/20	12.00/20 12.00/20	Con R6602 Cum HR8600	6-474x534 6-514x6	602	6.1	465	200-2600 165-1800	Fu 5C650 Fu 5C650	5	Tim 1758 Tim 1758	2F 2F	H	** -8. ** -8.
Fabos (c) FD201A (c) FD201B (c) FD201B (c) FD251B (c) FD251B (c) FD201A (c) FD201C (c) FD251D (c) FD302B	130 130 132 131	177 177 174 174 175	19000 19000 27000 17000 19000 20000	5700 5700 7500 6100 6000 6500	7.50/20 7.50/20 7.50/20 8.25/20 8/22.5 8/22.5 10/22.5	9.00/20 8.25/20 8.25/20 9.00/20 10/22.5 10/22.5 11/22.5	Chevrolet Ford Ford Ford Chevrolet GMC Int Ford	6 38 4 3 1 8 3 .5 x 3 .1 8 3 .6 x 3 .1 8 3 .8 x 3 .5 8 3 1 4 3 7 4 6 3 1 4 3 7 4 8 3 .8 x 3 .6	239 256 317 283 347 269	7.5 7.2 8.0 7.8 6.5	215 228 286 270 317 227	132 4200 140 3900 170 3900	Ford* Ford* Chevralet* GMC* Int*	10 10 8 8 8	Chevrolet Ford Ford Ford Chevrolet GMC Tim F105 Eat 1790	Hyf HF SF Hyf Hyf HF SF	******	7.17-7. -6. -6. -7.0-7.
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For references and abbreviations see page 87

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#### To stop exhaust-port plugging-STANOLUBE HD-M Motor Oil

How change to this oil can eliminate coke build-up





#### Quick facts about Stanolube HD-M Motor Oil

- Made from highest-quality, solvent-extracted base stock. Unsuitable light and heavy components are removed. Wax and unstable compounds are also removed.
- Special, exclusive detergent-dispersant additive is blended in.
- Oxidation inhibitor and other additives to preserve lubricating qualities and prevent corrosive attack on engine parts also blended in.
- Able to keep engines clean, reduce piston varnish, ring plugging and cylinder and ring wear.

Diesel engines, especially two-cycle equipment, operating in metropolitan transit systems have a tendency to build up coke in the ports. The stop-and-go driving, the idling and the low speeds encountered in this kind of service are all conducive to port plugging. The use of more expensive fuels doesn't solve the problem. And down time plus labor costs caused by this plugging increases operating expense. Standard Oil men have found an answer.

Standard automotive lubrication specialists and research men recreated conditions of bus operation in the laboratory. Later they proved their findings in field tests. They found that using STANOLUBE HD-M Motor Oil reduced exhaust-port plugging at least 50 per cent. This significant reduction of plugging can, for the most part, remove it as a problem in bus equipment.

If you operate equipment in intra-city service, chances are exhaust-port plugging is a problem in your equipment. Find out how you can lick it by using new STANOLUBE HD-M Motor Oil. Call the Standard Oil lubrication specialist nearest you in any of the 15 Midwest or Rocky Mountain states. Or write Standard Oil Company, 910 S. Michigan Ave., Chicago 80, III.

You expect more from STANDARD



and get it!

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	WHEE	E			TIRE	SIZES		ENGINE D	ETA	ILS			TRANSMISSI	ON	RE	AR AX	LE	
MAKE		-	Weight		D-dua S-sing	l rear le rear											97	
AND MODEL	Minimum Standard	- 1	Gross Vehicle V for Normal Serv	Chassis Weight (See definition)	Standard Front and Rear	Maximum Authorized Tire Size (Duals unless noted)	Make and Medel	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake M.P. at R.P.M. Given	Make and Model	Forward Speeds	Make and Model	Gear and Type	<b>Drive and Torque</b>	Gear Ratio Range in High
Four-Wheel Drive—	-Cont	d																
W660 DW660 W670 DW970	177	201 201 191 224	46000 46000 59000 59000		11/22.5D 11/22.5D 11/22.5D 11/22.5D	12/24.5 12/24.5 12/24.5 12/24.5	Own 503 Own 4-71 Own 503 Own 6-71	6-4%x5% 4-4%x5 6-4%x5% 6-4%x5	284 503	17.0	455 374 455 630	152-2300 217-3000		10 10 5 5		WF WF WF	R	5.4 -7.2 5.4 -6.8 8.2 -9.2 8.2 -9.2
Marmon-Hery 6M104 M104 6M504 M504 M504 M504 M604 M604 M604 M706 M706 M706 M706 M706 M706 M706 M706	110 130 130 130 130 130 132 132 132 132 132 132 178 205 233 178 205	118 118 154 154 154 192 192 192 192 192 192 192 192 193 193 193 178 205 233 178 205 233	5500 5500 17000 17000 21000 21000 21000 22500 22500 22500 24000 24000 24000 24000 24000 24000 24000 24000 24000 24000	*3425 *4964 *5089 *5339 *5464 *5464 *6788 *7003 *7812 *7840 7840 7890 7870 7870	6.50/16\$ 6.50/16\$ 7/22.5D 7/22.5D 8/22.5D 8/22.5D 8/22.5D 8/22.5D 8/22.5D 11/22.5D 11/22.5D 11/22.5D 9.00/20D 9.00/20D 9.00/20D 9.00/20D 9.00/20D	6.50/16\$ 6.50/16\$ 8/22.5 8/22.5 8/22.5 10/22.5 10/22.5 10/22.5 10/22.5 10/22.5 10/22.5 10/22.5 10/22.5 10/22.5 10/22.5 10/20.00/20 10.00/20 10.00/20 10.00/20 10.00/20	Ford Ford Ford Ford Ford Ford Ford Ford	6 3 x3 6 x3 6	223 272 272 272 272 272 272 272 272 272	8.3 8.3 7.6 8.3 7.6 7.6 8.3 7.6 7.6 7.5 7.5 7.5	260 207 262 260 262 260 262 299 328 318 318 318 318 326	200 - 3800 200 - 3800 200 - 3800 212 - 3800 212 - 3800	Ford * Ford   Ford   Ford   Ford† Ford†   Ford†   Ford†   Ford†   Ford   Ford   Ford	4 4 4 4 4 4 5 5		HF HF	HHHH	-3.7 -3.7 -5.8 -5.8 -6.8 -6.8 -7.1 -7.1 -7.1 -7.1 -7.1 -7.1 -7.1 -7.1
Dehkosh W-216 W-316 W-316 W-516 W-516 W-516 W-516 W-516-C W-1700-15-C W-1700-15-C W-1700-15-C W-1700-15-C W-1700-15-C W-1700-15-C W-816 W-816 W-824 W-825 W-816 W-826 W-827 (D) W-906 W-2201 W-2208-MT W-2208-MT W-2800 W-2801	152 152 152 150 160 % 150 150 150 150 150 150 150 158 168 160 160 160 160 160	205 205 205 205 205 205 205 205 205 205	44000 54000 44000 54000 62000 120000	9310 10740 11180 10300 12300 12600 12600 12800 14100 14300 14500 16500 16500 19900 19900 19900 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 19500 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For references and abbreviations see page 87

Continued on Page 102

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NEW SHULER

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Lightweight Brakes



- 3 Shoes incorporate specially-designed channel rib section for additional rigidity without adding weight.
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- 5 Hardened and ground roller shafts and cam rollers on the cam end of the brake shoes. The roller shafts are locked in place in the shoes and the cam roller turns on the shaft, not in the metal of the shoe.
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WEST COAST WAREHOUSE Onkland, Collierate Southwest Warehouse

of axles.

Continued from Page 100

	WHE BAS				TIRE			ENGINE D	ETA	ILS			TRANSMISSI	ON	RE	AR AX	LE	
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AND MODEL	Minimum Standard	Maximum Standard	Gross Vehicle Weig for Normal Service	Chassis Weight (See definition)	Standard Front and Rear	Maximum Authorized Tire Size (Duals unless noted)	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Make and Model	Forward Speeds	Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
ix-Wheelers—Cont	'd																	
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For references and abbreviations see page 87

Continued on Page 104

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# Ditzler Finishes meet beauty and utility standards of Menzie Dairy Fleet

. . . says Edwin M. Frew, Fleet Superintendent



No more convincing proof of the beauty and durability of DITZLER QUICKSET Enamels for commercial bodies and trucks can be presented than their use by the fleet of the Menzie Dairy Company of McKeesport, Pa. These sturdy finishes are used exclusively on the 235 vehicles owned and operated by this company.

• "We turned to Ditzler Enamels for the exteriors and interiors of our trucks," is the statement by Ed Frew, fleet superintendent, "because we found they meet our needs for better appearance and greater durability with utmost satisfac-

tion. We attach a great deal of importance to these requirements for reasons of economy and the pride we take in the good appearance of our fleet. We were especially impressed by the greater resistance of these finishes to color changes caused by the ammonia used in refrigeration."

• For more than half a century, DITZLER QUICKSET Enamels have been outstanding for durability, workability, appearance and speedy drying. Many national fleets have learned by experience they improve appearance and deliver far more truck miles in actual service.

Ditzler Color Division • Pittsburgh Plate Glass Company • Detroit 4, Mich.



#### DITZLER

SYMBOL OF SERVICE FOR SEVENTY-FIVE YEARS

PITTSBURGH PLATE GLASS COMPANY

Continued from Page 102

	WHE	EL-			TIRE	SIZES		ENGINE D	ETA	ILS			TRANSMISS	SION	RE	AR A	KLE		
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For references and abbreviations see page 87

#### Turntable Handles Big Trucks in Small Space

THE NEW LIFE and Casualty Insurance Company Tower in Nashville, Tenn., has a delivery area of less than 3000 sq ft, including platforms! Yet large city delivery vans take less time for stops at the L & C Tower than at most downtown commercial buildings.

A turntable, 24 ft in diameter, is the answer. Built by Macton Machinery Co., Stamford, Conn., it cost the Tower less than \$25,000 installed complete. It handles loads up to 30,000 lb and makes a half turn in 30 seconds.

#### Trucks enter the area

by a ramp from the street and pull directly onto the turntable. The driver or his helper pushes a switch button on the wall to start the disc turning, punches another button to stop it. He then backs his truck up to the proper platform and unloads. All but the largest trucks can then pull out from that position. If not, another turn of the table heads it in the right direction.



The turntable occupies a pit 3-ft deep. Its pie-shaped deck-

a pit 3-ft deep. Its pie-shaped deckplates rest on three concentric steel rings, crossbraced with I-beams at the plate joints. The outermost supporting ring has external teeth which mesh with a driving spur gear on the electric motor in a small pit next to the table. Maintenance consists of greasing the ring gear and the gear box once a year.

E. R. Dismukes, manager of the real estate division of Life & Casualty, says no problems have arisen in connection with the turntable. Motor freight companies in Nashville are reported unanimous in approval.

Some tenants of the building do feel that since the turntable is designed for large trucks, there is little benefit to panel delivery types. A big unit sometimes waits for a panel job while the driver is in the building.

But even these critics agree that delivery is quicker and more orderly at the L & C Tower than at most other receiving platforms in Nashville's congested downtown area.



# chassis lube jobs last longer under toughest, wettest conditions with NEW GULFLEX MOLY GREASE

200 MILLION MILES OF TOUGH SERVICE PROVE IT! Gulflex Moly Grease was thoroughly field-tested for more than 200 million miles by a major trucking firm, over all kinds of roads, in every kind of weather. This intensive road test proved that Gulflex Moly lasts longer, reduces rate of wear—even under wet conditions and in the toughest service.

GULFLEX MOLY CONTAINS MOLYBDE-NUM DISULFIDE—a remarkable anti-friction agent. The molybdenum disulfide particles adhere to metal surfaces, providing a thin but durable protective film. YOUR FLEET CAN SAVE MONEY, RUN BETTER—using Gulflex Moly for complete chassis lubrication—fittings, pumps, king pins, shackle bolts, torsion suspension bushings and fifth wheels.

New Gulflex Moly Grease is available now in 120-lb. and 400-lb. drums, and 35-lb. pails. Call your nearest Gulf office or send for a new Gulflex Moly booklet.

**GULF OIL CORPORATION** 

Dept. DM, Gulf Building Pittsburgh 30, Pa.





## Oshkosh Offers New 30-Ton Four-Wheel Drive Dumper

WITH A PAYLOD CAPACITY of 60,000 lb and a GVW of 120,000 lb, this new Model No. W-2800 is the biggest and newest member of Oshkosh's heavy duty line. This off-highway giant is available with the Cummins NHRS or NRTO diesel developing 320 and 335 hp respec-

tively at 2100 rpm. For operators preferring Butane, the Hall-Scott Model No. 6182 B-1 is also offered.

A torque converter,

Allison Model No. TC 500, coupled with either the Allison Model No. TG 602 or CBT 5640 transmission, head the power train. Rear axle is a heavy duty planetary type rated at 90,000 lb. Front axle is double reduction—full floating, alloy steel heat treated with 3-in. shafts.

Other features include Vickers power steering, an hydraulic retarder, a single speed transfer case, air mechanical brakes with two independent sets of shoes in each drum operated by individual air-brake chambers, and an alloy heat treated frame. Standard tires are 18:00 x 25, 28 ply. The electrical system is 24-volt, with 12-volt and air starter optional.

**Body capacities** 

range from 17 cu yd for iron ore to 28 cu yd for bauxite. Body exhaust heat controlled from the cab is optional.

The Model W-2800 is engineered for 1/3-2/3 weight distribution for equal tire loading. This, says Oshkosh, increases tire life 25 per cent and reduces road haul maintenance costs. With all-wheel drive, it provides traction for all operating conditions and assures excellent maneuverability.

## Dallas Transit Continues Air Conditioning Tests

AIR CONDITIONING for all buses on eight Dallas (Tex.) Transit Company lines went into operation recently. The experimental program began with the air conditioning of two buses in 1956. It will continue to expand this summer until 122 buses in the company's 515-bus fleet are equipped with the units.

Fares on the eight air-conditioned routes were raised one cent to cover the increased operating costs during the air-conditioning season. To date, \$370,000 has been spent on the purchase and installation of air conditioning equipment. This, the company points out, is an experiment on a rather large scale.

**Evaluations of the program** 

look good so far. Ultimate cost of equipping the entire bus fleet with air conditioning is the biggest item to be faced. Estimated cost is 1½ million—no small amount. How the present program works out will play an important part in future conversion plans.

The experimental program itself started in August, 1956. In 1957 additional buses were equipped with air conditioning. Equipment and installation averaged \$3000 per bus.

Increased operating cost

on the air-conditioned buses was the reason for the one cent fare increase on the air-conditioned routes. Tests on air conditioning operating costs are still being conducted by Dallas Transit. Computing instruments are attached to electric meters that furnish current for the air conditioning units. They show the number of hours one or more of the five units per bus are in operation. These figures are compared with bus fuel requirements, and other factors, to arrive at the estimated operating costs for each

#### Here are the results of tests

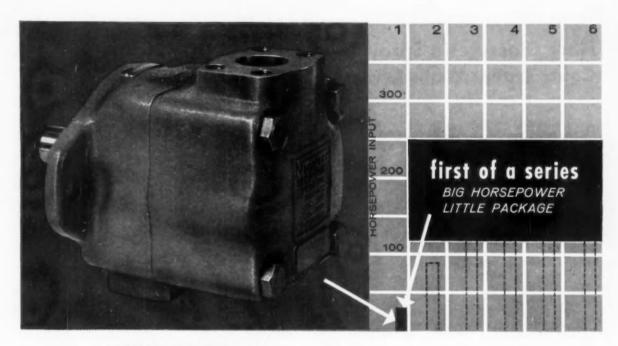
made in 1956. They are based on an outside temperature of 75 deg.

- One unit in operation raised fuel consumption .7 gal per hr.
- With two units, went to .9 gph.
- Three units, 1 gph increase.
- Four units, 1.3 gph.
- With all five in operation, 1.3 gph increase.

Fuel consumption showed a still greater increase as the outside temperature went above 75 deg.

Dallas Transit figures with only one of five air conditioning units in operation on each of 122 buses, fuel consumption amounts to a combined average increase of 85.4 gph in 75-deg weather. With all five units in operation on the same buses, the combined average jumps to 158.6 gph—more on hotter days. And fuel consumption is just one of many factors relating to operating costs.

The air conditioning equipment on the Dallas Transit buses can produce 20-deg temperature differentials. Cooling capacity for one bus amounts to 20,000 Btu's. The company hopes that by the end of the year they will be able to end the "experiment," and based on the results, equip all 515 buses with air conditioning.



### MEW VICKERS, high performance vane pump

#### high speed ● high pressure ● high efficiency ● high service life

NEW COMPACT DESIGN . . . more than twice the horsepower of previous pumps in the same package

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NEW VANE CONSTRUCTION . . . positive vane tracking at all speeds assures efficient operation at increased speeds and pressures.

NEW SIZES not previously available . . . answers mobile equipment designers' need for greater hydraulic horsepower in limited space.

NEW PARTS INTERCHANGEABILITY ... many common parts for single and double pumps (two pumps on the same shaft in one envelope). Lessens inventory requirements.

NEW 4-BOLT SAE FLANGE CONNECTIONS . . . will also accommodate user's 2-bolt flanges of the proper design.

NEW 2-BOLT MOUNTING (SAE 1959 STD.).

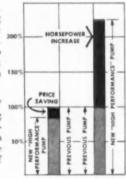
NEW REPLACEABLE PUMP-ING CARTRIDGE . . . all wearing parts of pump are incorporated in one replaceable cartridge. Easy field replacement without removing pump from its mount. Cartridges available in kit form.



MORE HORSEPOWER PER DOLLAR. The graph at the right makes a revealing comparison between this new pump and a

previous pump of the same rated delivery. The new Vickers "High Performance" pump provides more than twice the horsepower at less cost while shrinking package size from 150% 200 to 112 cubic inches.

The complete line of "High Performance" pumps (both single and double) is being readied for release. Size range will accommodate your largest requirements. This first model of the series is available in three ring capacities; 12 gpm, 14 gpm, and 17 gpm as shown in table below.



Model Number	Deliver	y-GPM	Input Horse-	Bestern	Weight	
	1200 RPM 100 PSI	2000 RPM 2000 PSI	2000 RPM 2000 PSI	Package Size1		
12A-**10	11.8	17.8	25.5	L. 5%"	26 Lb.	
14A-**10	13.6	20.4	29.0	W. 45%" H. 534"		
17A-**10	16.6	25.2	36.0	H. 5¾*		

Write for new illustrated Bulletin No. M5108 for further details and performance characteristics.

#### VICKERS INCORPORATED

DIVISION OF SPERRY RAND CORPORATION

**Mobile Hydraulics Division** ADMINISTRATIVE and ENGINEERING CENTER Department 1418 . Detroit 32, Michigan

Application Engineering Offices: \* ATLANTA \* CHICAGO \* CINCINNATI CLEVELAND \* DETROIT \* GRAND RAPIDS \* HOUSTON \* LOS ANGELES AREA (EL Segundo) \* MINNEAPOLIS \* NEW YORK AREA (Springfield, N. J.) PHILADELPHIA AREA (Medilo) \* PITTSBURGH AREA (M. Lebanon) PORTLAND, ORE. \* ROCHESTER \* SAN FRANCISCO AREA (Berkeley) SEATTLE \* ST. LOUIS \* TULSA FACTORIES ALSO IN AUSTRALIA, ENGLAND, GERMANY & JAPAN IN CANADA \* Visitors\* Secrety of Compile St. Toronte, Monterval & Vencourses

IN CANADA: Vickers-Sperry of Canada, Ltd., Toronto, Montreal & Vancouver

ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

#### Fiber Glass-Resin Spray Gun Coats Trailer Walls Cheaper

A NEW SPRAY GUN cuts trailer wall refinishing time and cost by eliminating the old hand-applied method. Called the "Espey Carliner System," the gun has two nozzles arranged so that the sprays from them converge about eight to ten inches in front of the gun.

The polyester resin which the gun sprays is three component materials. When all three are brought together in the proper ratio, there is a chemical reaction which results in hardening. The finished film consists of a basic polyester, a catalyst, and an excelerator.

A separate pressure pot

feeds each nozzle with the correct amount of resin. Fiber glass strands are fed through a chopping device in the center of the gun which cuts the strands into pre-selected lengths varying from % to 4-in. At the same time they are thrown into the converging streams of resin.

The gun, hose lines, pressure pots and fiber glass supply are mounted on a mobile unit which can be rolled right into the trailer. The spray gun operates on 30 psi of air and uses about 15 to 20 cfm. The entire spray system was devised and built by the Industrial Division of the Spring Packing Corp., Chicago.

In actual operation, the combined resin and chopped



fiber glass are sprayed on and immediately rolled down with a standard paint roller to produce an even textured coating. Following this heavy application, a light topcoat of the resin is rolled on to insure that all the fiber glass strands are laid down and completely covered. The finished product is shown above.

#### Metro Introduces High Cube Models

INTERNATIONAL HARVESTER announced recently that Metro Van bodies are available in three new increased cubic capacity models. Smallest is the 12-ft 7-in. model which has a 564 cu ft capacity.

The second model is 14-ft 7-in. with a 644 cu ft capacity. The largest is the 16-ft 7-in. model (right, in photograph) with a capacity of 724 cu ft. These Metro

Van bodies are available on the International Model No. AM-160 chassis in the 14,000-16,000 lb GVW range.

#### Increased interior height

from 75% in. on standard Metro models to  $79\frac{1}{2}$  in. on the new models is one of the main features. Interior width has been increased from 78 to 88 in. resulting in the added cubic capacity.

Two smaller Metro Van bodies have also been introduced for operations requiring high cubic capacity for light, bulky loads. The smallest is  $9\frac{1}{2}$ -ft long (left in photograph). The other model is  $10\frac{1}{2}$ -ft long. Both have 75-in. interior heights and 78-in. interior widths. Cubic ft capacities are 375 and 415 respectively. They are both offered on International chassis Model Nos. AM-120, AM-130, and AM-150. GVW's are from 5,400 to 11,000 lb.

#### International's lightweight

Metro-Lite series has been expanded to include models in 9-ft 8-in., 10-ft 8-in., and 12-ft 8-in. sizes. Fiber glass reinforced plastic front-end section side panels and roof caps have been incorporated into these aluminum bodies.

A "Poly-Chrome" metallic synthetic enamel finish is now available on the Metro-Lite series. This new enamel permits operators to letter their trucks as they are received from the factory without further painting. The new finish saves the additional cost of a paint job.





#### **Oriflow Shock Absorbers**

# EXTRA TOUGH

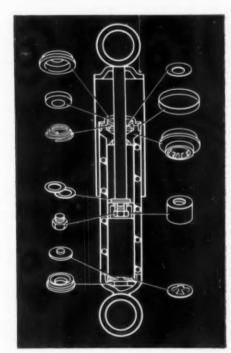
Chrysler engineered hydraulic control makes a simpler shock construction to take your fleet's roughest treatment

Better hydraulic shock control is the reason behind the MoPar Oriflow—and simpler, longer life construction is the result.

Measure the difference Oriflow makes in cutting your costs!

Oriflow's radically different design uses fewer parts. With this greater simplicity there's greater durability, less down time—longer, more profitable life.

MoPar Oriflows are quick and easy to install—come in convenient packages. Made and guaranteed by Chrysler Corporation. You get immediate delivery from your MoPar wholesaler or your Plymouth, Dodge, De Soto, Chrysler, Imperial, or Dodge Truck dealer.



Exploded view shows the amazing simplicity of the MoPar Oriflow engineering principle. These few parts do the entire job—more effectively, longer.

MoPar Division, Chrysler Motors Corporation, Detroit 31, Michigan

### July News Roundup

#### "Keep Fuel Taxes Uniform"

DEARBORN, MICH.—At a meeting of the North American Gasoline Tax Conference, A. M. Shirley of Cummins Engine Co. said it would be discriminatory against diesel truck fleets to place a higher tax on diesel fuel than on gasoline. "Any departure from uniform fuel taxes is retrogressive and would have a damaging effect on the economy of the nation, and would harm a key industry."

#### Fleets Get New Credit Rating Base

DALIAS, TEXAS—American Trucking Assns.' National Accounting and Finance Council at its annual meeting heard a Dun & Bradstreet financial expert describe its new fleet rating system. Most significant quote was, "About the only yardstick we use is that after posting prepaid expenses and equipment obligations as non-current, we don't like to see the current ratio (of liabilities to assets) go below 0.75 to 1. We also become disturbed if a carrier loses money two years in a row."

#### Safety Award Nominations Asked

WASHINGTON, D. C. — Nominations have been asked for the annual Paul Gray Hoffman Award for outstanding professional service in the field of traffic safety. Closing date is Sept.

#### CCJ Gets Award for Sixth Time



For the sixth consecutive year, Commercial Car Journal has won the National Safety Council's Public Interest Award for its editorial support of traffic safety. Shown above is CCJ Editor Bart Rawson (right) receiving the honor from George Lowe (Atlantic Refining Co.), chairman of the Street and Highway Committee, Philadelphia Chamber of Commerce.

1, 1958, and details can be obtained from Automotive Safety Foundation, 200 Ring Bldg., Washington 6, D. C.

#### Mack Gets New Chairman

PLAINFIELD, N. J.—E. D. Bransome has retired as Chairman of the Board of Directors, Mack Trucks, Inc. He is succeeded by P. O. Peterson who will serve in a dual capacity as both Chairman of the Board and as Mack president.

#### NFPA OK's New Fire Standard

CHICAGO—National Fire Protection Assn. at its annual meeting gave its OK to a tentative fire protection standard in construction and operation of motor freight terminals. Next step is for those interested to review the standard prior to final adoption. If you like a copy, it can be had at nominal cost from National Fire Protection Assn., 60 Batterymarch St., Boston 10, Mass.

#### Want to Pay Interest on Your Taxes?

ORLANDO, FLA. - National Highway Users Conference Director Arthur C. Butler told the annual convention of the Growers and Shippers League of Florida that reciprocity between states, a stop to highway fund diversion and better roads are necessary for better highway transportation. He also pointed out that under the provisions of the Highway Act of 1958, advances for highway building from federal general funds to the Highway Trust Fund are repayable with interest. Said Butler, "Therefore, highway users, who are also paying into the general fund, would be paying interest on their own taxes."

#### "Transport Regulation Is Necessary"

WHITE SULPHUR SPRINGS, VA.—ATA
President Guy W. Rutland, Jr., told
members of the National Assn. of
(TURN TO PAGE 180, PLEASE)

Ja

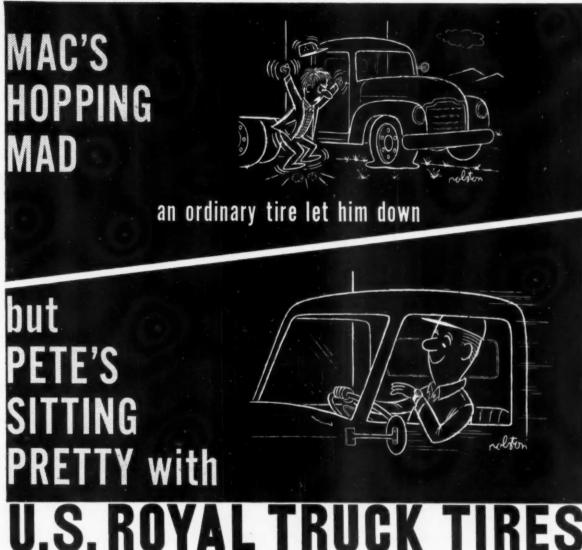
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#### First Quarter Intercity Truck Tonnage

ву и	regions			By Commodities				
Region	First Quarter 1958*	First Quarter 1957*	Per Cent Change	Commodity	First Quarter 1958*	First Quarter 1957*	Per Cent Change	
New England Middle Atlantic Central Southern Northwestern Middlewestern Southwestern Rocky Mountain Pacific	4,163 15,646 19,522 9,341 4,038 3,223 6,044 2,724 8,267	4,464 17,435 22,567 9,041 3,876 3,321 5,902 2,457 8,296	- 6.7 -10.3 -13.3 + 3.3 + 4.2 - 3.0 + 2.4 +10.9 - 0.1	General Freight Household Goods Heavy Machinery Liquid Petroleum Refrigerated Solids Refrigerated Solids Agricultural Commodities Motor Vehicles Building Materials All Other	33,637 290 576 20,267 806 323 847 2,590 2,241 11,409	36,606 280 760 20,151 761 313 824 3,377 1,997 12,229	- 8.1 + 3.3 - 24.2 + 0.6 + 5.9 + 3.2 + 2.7 - 23.3 + 12.2 - 6.7	
United States	72,988	77,299	- 5.6	United States	72,988	77,299	- 5.6	

<sup>\*</sup> In thousands of tons covering 2206 Class I and II intercity common and contract motor carriers of property as reported by ATA Research Dept. It does not represent TOTAL truck tonnage.



# U.S. ROYAL TRUCK TI

### fleet-proved against road delays!

Ask the big fleets . . . Cooper-Jarrett, Denver-Chicago, Watson Bros., for instance. Their records prove-beyond any questionthat using U.S. Royals cuts down costly road delays, steps up ontime arrivals!

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58

These great new 1958 tires are built with engineering advances competition just doesn't have. Advances like DOUBLE-STRENGTH NYLON, twice as strong as any other cord ... SAFETY STEEL SHIELD®, invulnerable to tread cuts and ruptures.

Test a set of new U.S. Royals -call your U.S. Royal Dealer. And be sure to specify these fleetproved tires on the next new equipment you buy!

U.S.Royal Tires

U.S. ROYAL FLEETWAYS-favorite for allaround highway performance

U. S. ROYAL Super FLEETWAY - extra tread for long-distance runs at lowest permile cost

U. S. ROYAL FLEETMASTER - extra mileage plus extra traction—full premium tread





States Ru Rockefeller Center, New York 20, N. Y. In Canada: Dominion Rubber Co., Ltd.

COMMERCIAL CAR JOURNAL, July, 1958

111

### **Consolidated's Special Group**

Continued from Page 71

jected the all-purpose lug type, which showed not only 10 per cent less mileage for the original tread than did the other two test tires but also left less base stock—just about enough for one cap. The new highway lug type tire, in addition to 10 per cent more mileage than

the all-purpose lug type, left a base stock substantial enough to allow more than one cap.

Final results of the tests showed that in the eastern region the mileage increase for the original tread of the highway lug type was 140 per cent over that of the regular ribbed highway tire, or 60,000 miles as compared with 25,000 miles. In the mountainous western region the gain was 93 per cent over the regular ribbed highway tire, or 58,000 miles compared with 30,000.

On the basis of (1) drive wheel operation on the original tread of 58,000 miles on the highway lug type tread and (2) 50 per cent driving and 50 per cent trailing on recap mileage, Kupp points out, it will take only 1.1 recaps on the new highway lug type to equal the cost per mile of the regular ribbed highway tire with two recaps.

### "We definitely know

we will get more than 1.1 caps," he says. "If for instance, we get two recaps—and it looks now as if we would—on the new highway lug type tire, it is conceivable that we'll save \$2,088 in tire costs in a four-week period in the western region."

(TURN TO PAGE 114, PLEASE)

### Going Up!



This cable-controlled aerial elbow speeds light maintenance work in Cleveland, Ohio. Made by the J. H. Holan Corp., it reaches as high as 36 ft 10 in. or horizontally, 31 ft 4 in. It can be controlled from the truck body or from the work buckets. The buckets are made of fiber-glass-reinforced plastic and have a capacity of 600 lb. They provide protection against 50,000 volts.



# Handy Governors

to Avoid Accidents and Reduce Operating Costs



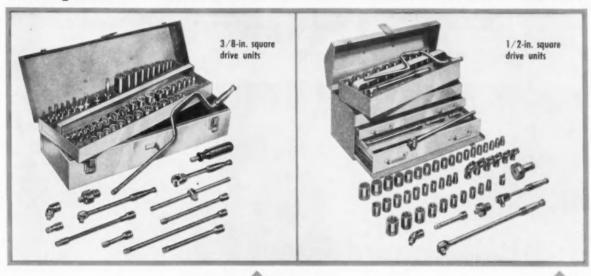
KING-SEELEY CORPORATION

ANN ARBOR, MICHIGAN

WORLD'S LARGEST MANUFACTURERS OF AUTOMOTIVE GOVERNORS

### STEP UP YOUR EARNING POWER NOW!

with these Singe-on socket wrench sets
140 pieces • available on convenient credit terms



### 272-F-B 72-piece, 3/8-in. drive FERRET SET

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Ratchet, speeder, spinner, extensions and adaptors, plus a variety of 50 sockets and screwdriver heads. Attachments hook up fast — hold tight through any turning job.

### **OWN BOTH THESE SETS**

272-F-B, 3/8" drive set, \$118.20 368A-M-B, 1/2" drive set, 175.70 Both Sets — Only .........\$293.90

A small down payment puts them to work for you
Prices subject to change without notice.

Give your earnings a boost with this complete selections of *Snap-on* 3/8-in. and 1/2-in. drive socket wrench units. There's no need to buy tools piecemeal. *Snap-on* will put these sets in your hands for just a little down, a little each week. With these top-quality matched units you can make the most of your skills — turn out the extra work that puts extra pay in your pocket.

Whether you need sets like these, shop equipment items, or a complete shop tool layout, the *Snap-on* easy payment plan can help you. Ask your *Snap-on* man for details.

### 368A-M-B 68-piece, 1/2-in. drive MASTER SET

Ratchets, spinner, speeder, extensions and adaptors for a wide variety of work. Set includes 55 sockets of various types and sizes. This set will give you speed, leverage and reach for almost any hex nut you encounter.



Ratchet, nut spinner, extensions and universal joint, plus 24 sockets from 3/4 to 2-3/8 inches. An ideal shop set for big equipment. This *Snap-on* set keeps all popular truck, bus, trailer and tractor sockets in one complete unit—saves hours of time when machines are down for repairs.



SNAP-ON TOOLS
CORPORATION
8026-G 28th Avenue Kenosha, Wisconsin

### . . . Special Group

Continued from Page 112

The department also tackles less formal and exhaustive research. For example, says Ogden, "We had an urgent request from one of our shop managers to see if we could find why he was having trouble with a particular final drive that had never given him trouble before. The trouble had developed on a group of new vehicles. In laboratory tests we definitely pinpointed the source of the difficulty. The wrong type of lubricant was being used. We suggested he change to a lubricating oil with sufficient film strength. He didand operation returned to normal.

Another study, conducted

by Development Engineer Harry Dozier, led to a new method of installing insulation in a 40-ft trailer

-one which greatly improved the quality of the insulation without increasing the quantity, or trailer weight. (For some other trailer ideas from Consolidated's Dozier. see Jan., page 86.)

"The Equipment Development Dept." says Ogden, "continues the work of the Maintenance Dept. in development, though on a far larger scale. It does many things Maintenance could not do."

### After EDD has successfully

tested a new piece of equipment or a new method, it can only offer a recommendation that it be adopted. The department is not authorized. Ogden emphasizes, to effect the adoption. The change must be accepted by the regional managers.

After studies are completed, the results are reported in the Progress Bulletin, which is circulated among the operating managers of the various regions or division, the people who actually use the equipment.

"The Progress Bulletin," said Ogden, "besides serving to report our findings, is our 'sales medium.' When we recommend adoption of a piece of new equipment or of a new method, we make it an invariable rule to point out what this change is going to mean in terms of the dollars and cents it should save."

The full-time staff of CF's Equipment Development Dept. consists of Ogden, who is in charge, three more engineers, a statistician, a draftsman and several clerks.

END

Please Resume Reading Page 72

### Five Car Haul-Away



This new transporter carries five cars, light trucks or station wagons, yet stays in the 35-ft length limit. It is made by the Fox Body Co., Janesville, Wis. with technical assistance from the W. R. Arthur Co., a local haul-away company. Named the "Hercules," the transporter handles air suspension cars and other low clearance vehicles without special modifications. It can also carry trucks with up to 180-in, wheel bases, with adequate side clearance.



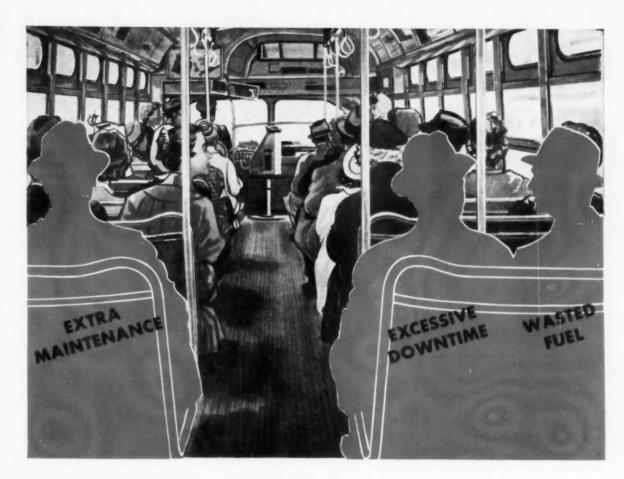
### YOU STAND TO SAVE at least \$100 per trailer the first year!

And the SECOND year...look for savings of better than \$150! Any way you look at it, your Mechanex conversion will pay for itself in six months - save fuel, brakes, down-time, road calls, expensive bearings. From coast to coast, major fleets are getting results like these and better with MECHANEX...the original FACE-TYPE oil seal for trailer and tractor axles.



Available on ALL makes of new trailers and at Trailer Branches and leading Parts Suppliers.

144 BROADWAY, DENVER, COLORADO



# "Ghost Riders" Never Pay!

Are your units carrying "ghost riders"? Phillips 66 individual service will help you get rid of these expensive "ghosts" . . . wasted fuel, avoidable maintenance and idle equipment.

A Phillips 66 Lubrication Engineer is at your service to help you increase profits. His specialized training and experience is yours to command without obligation.

Call the Phillips sales office nearest you for more information about Phillips 66 individual service.



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1958

### SALES OFFICES:

AMARILLO, TEX.—First Not'l Bank Bldg. ATLANTA, GA.—1428 West Peachtree St. N.W. Station "C" P.O. Box 7313 CHICAGO, ILL.—7 South Dearborn

DENVER, COLO.—1375 Kearney St.
DES MOINES, IOWA—6th Floor, Hubbell Bldg.

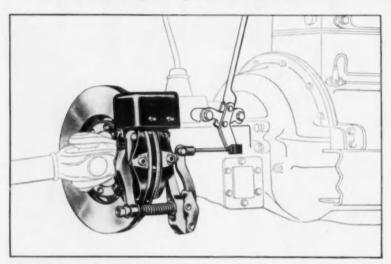
### PHILLIPS PETROLEUM COMPANY

HOUSTON, TEX.—6910 Fannin St.
INDIANAPOLIS, IND.—3839 Meadows Drive
KANSAS CITY, MO.—201 E. Armour Blvd.
MINNEAPOLIS, MINN.—212 Sixth St. South
OMAHA, NEB.—3212 Dodge St.
RALEIGH, N. C.—401 Oberlin Road

SALT LAKE CITY, UTAH—& South Main ST. LOUIS, MO.—4251 Lindell Blvd. SPOKANE, WASH.—521 East Sprague TAMPA, FLA.—3737 Neptune Street TULSA, OKLA.—1708 Utica Square WICHITA, KAN.—501 KFH Bldg.

### Use PHILLIPS 66 HEAVY DUTY MOTOR OILS

### You Get Positive Protection Against Runaway or Parking Accidents When You Specify TRU-STOP Brakes



TRU-STOP brakes operate directly on the drive shaft. This means that they are not only excellent parking brakes, but dependable emergency service brakes as well. There's no dangerous self-energizing. TRU-STOP brakes have the surplus capacity for repeated use as an auxiliary to service brakes.

### 100% Ventilation Minimizes Fading

Brake efficiency depends on ability to dissipate heat rapidly and so prevent fading. TRU-STOP brakes are 100% ventilated. Discs are exposed to air even while braking. The TRU-STOP ventilation system circulates air between the disc plates.



### Longer Life with Uniform Brake Pressure

The discs of TRU-STOP brakes are squeezed between the flat surfaces of the shoes. The brake lever operates both the front and rear lever arms simultaneously, and pressure is exerted on the center of each shoe. This puts the entire lining surface in contact, provides for even wear. TRU-STOP brake linings are easy to replace.



### FOR POSITIVE PROTECTION...

### Specify TRU-STOP BRAKES on ANY

Heavy Duty Equipment that Requires Braking

WRITE for Catalogs DH-33 and DH-530

Automotive and Aircraft Division

AMERICAN CHAIN & CABLE



601 Stephenson Bldg., Detroit 2 2216 South Garfield Ave., Los Angeles 22 • 929 Connecticut Ave., Bridgeport 2, Conn.



International axle catalog describes single reduction and two-speed models in the 50,000 GCW and up capacities. Rear axle ratings range from 18,500 lb to 23,000 lb. For a free copy write to Consumer Relations Dept., International Harvester Co., 180 North Michigan Ave., Chicago 1, Ill. Request Form No. CR-320-H.

Condensate air tank valve is described in a bulletin from Expello. The valve is the air exhaust operated type and has a heating element to prevent brake and air lines from freezing. Fleet operators should write Expello Sales Division, 13341 Livernois Ave., Detroit 38, Mich., for free copies. Ask for Form No. 58-1.

Tractor-shovel is described in a 4-page catalog from Nelson. Shown is the Nelson Model No. 22 in operation. Complete specs are included. Write for Catalog No. 582 from N. P. Nelson Iron Works, Inc., 850 Bloomfield Ave., Clifton, N. J. It's free.

Hydraulic brake parts catalog describes the entire line of Lisle brake equipment. Included are brake cylinders, hoses, switches, kits and wheel cylinder cup specifications. For your free copy, write the Lisle Corp., 807 Main St., Clarinda, Iowa. Ask for Catalog No. H-57.

Lathe catalog describes and illustrates the South Bend line. Specifications including capacities and floor space requirements are also given. Write to South Bend Lathe Works, South Bend 22, Ind., for a free copy of Catalog No. 5800.

Truck refrigeration equipment is described in a catalog from Kold-Hold. It is designed to serve as a guide in the selection of reefer systems for all types of service. Reefer operators should get a free copy by writing Kold-Hold Division, Tranter Mfg., Inc., Lansing 9, Mich. Ask for Catalog No. 58.

School bus equipment bulletin describes items in the Rub-Bub school bus safety package such as flooring, seat grab rails and entrance plating. Ask for Bulletin No. LL-7029 from Samuel Moore & Co., Mantua, Ohio, or your local Rub-Bub transportation products representative.

TRU-STOP





Unique to Reo are the close tolerances held in the building of Gold Comet Engines—both V-8's and 6's. Engine sleeves, pistons, connecting rods and piston pins are atmospherically conditioned and fitted in an even 70° temperature. They are then assembled in an airconditioned, dustproof chamber where a 70° temperature is maintained the year 'round. Piston pins to piston, for example, are selected to within ½ of one-tenth of

one-thousandth of an inch. Then actually *palm pushed* into place while all parts are at the exact same temperature.

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58

No truck engine in America is built with more rigid controls over quality. REO DIVISION, The White Motor Company, Lansing, Michigan.



# Economy of NYLON cord tires proved again in 33-month study

Pacific Intermountain Express has just released carefully kept cost/performance records proving that nylon cord tires save them dollars. This information could be valuable to you.



P. I. E. maintains around 3,000 vehicles, started using nylon cord tires in 1953.

### HERE ARE THE FACTS:

- 1. Cost per mile 11.5% lower with nylon.
- 2. 17% more original tread life with nylon.
- 3. Carcass failures 40.4% lower with nylon.
- 4. Over-all mileage 127% higher with nylon.
- 5. Road delays reduced over 80% with nylon.

For a copy of the complete report, write: E. I. du Pont de Nemours & Co. (Inc.), 5518-N, Wilmington 98, Delaware, or ask your tire supplier about the economy of nylon cord tires.



BETTER THINGS FOR BETTER LIVING ... THROUGH CHEMISTRY

THE SAFEST, STRONGEST TIRES ARE MADE WITH

NYLON

118

COMMERCIAL CAR JOURNAL, July, 1958

### "Torqmatic" Rates Well on Highway

Continued from Page 73

Just how good are these Allison transmissions in actual operation? So far, case histories of their use have been hard to come by. As yet, the available data does not produce conclusive comparisons of fuel economy and vehicle maintenance between the automatic and mechanical units. But there are definite indications that the automatics mean longer engine life, fewer differential and axle problems.

### Results of one

comparative study of the automatic transmission's effect on fuel economy is shown in Fig. 3. In the test, the fleet had identical trucks operating on the same run with equal payloads and equal power. Some trucks had mechanical transmissions, the others had automatics. For summary purposes, fuel economy of the mechanical units was placed at 100 per cent. Automatics, as shown, were getting 5.9, 14.6 and 27.2 per cent more miles per gallon.

In another test, also shown in Fig. 3, average fuel consumption of four trucks equipped with 5-speed mechanical transmissions and 3-speed auxiliaries was matched against a converter-equipped unit, The converter unit had 13.2 per

### **Alternators Cut Downtime**



The Werner Transportation Co. of Chicago cut vehicle downtime due to electrical failures on their 42 two-way radio equipped pickup and delivery fleet by switching to alternators. Using alternating systems made by Leece-Neville Co. of Cleveland, the two-way radio fleet has logged 500,000 miles without any increase in battery or electrical system failure, says the Werner Co.

cent better fuel mileage than the average of the mechanical units.

### Difference in power

train wear for one fleet is summarized in Fig. 4. It represents a year's experience of a 10-truck fleet averaging 50,000 on-highway miles per year per truck hauling foundry castings. Five of the trucks were equipped with a 4-speed mechanical transmission with 2-speed axle. These trucks required 25 clutch and 12 axle replacements during the year as compared to only one axle replacement among the five automatic transmission-equipped trucks.

Demonstration of the hydraulic retarder's effectiveness was recently made on a three-mile, seven (TURN TO PAGE 125, PLEASE)

### the only diesel engine oil made with patented



### SEND COUPON!

Write us for service on AMALIE X-L-O Diesel Engine Oil in your area, and ask us to explain the many superior features of this revolutionary new oil!

### AMALIE DIVISION L. Sonneborn Sons, Inc. Franklin, Penna.

We are interested in how AMALIE X-L-O Diesel Oil will help us get better engine efficiency, longer life, and lower costs.

Name
Address
City Zone State



### One truck or more...get The Hertz Idea and you've got 'em

Delivery delays? No such problem when you depend on Hertz to provide you with the trucks you need—whenever you need them! You can rent a hefty Chevrolet or other top-conditioned Hertz truck of any size or type. By the hour, day or longer. Just send your driver over with proper driver's license and identification. And rates are low. In Tampa, Florida, for instance, a 2-ton van truck costs only \$9.00 for 24 hours plus 11 cents a mile, including all gasoline, oil and proper insurance. Your local Hertz office is listed under "Hertz" in alphabetical telephone books everywhere! Hertz Truck Rental, 218 South Wabash Avenue, Chicago 4, Illinois.

Most experienced...by far

HERTZ Truck rental

Hertz brings you Business and World News Monday through Saturday with Walter Cronkite, Robert Trout and Bill Downs on CBS radio



FOR HEAVY HAULING

WAKDBS TURBOCHARGED DIESEL



WAUKESHA

1197 CUBIC INCH

**Extra Heavy Duty ENGINES** 

Up to 400 max. hp, all with counterbalanced crankshafts

Write for descriptive bulletins



WAKE BUTAN

Truck powered by Waukesha WAKR (Butane)



327-

WAUKESHA MOTOR COMPANY

Waukesha, Wisconsin

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# **ECHLIN**

has grown to be the Largest Independent Ignition Parts Manufacturer in the World

. . . and still growing

Cargoramic\* Design means best buy in van bodies



# THE NEW ALUMINUM DORSEY Champ

How can your Dorsey Truck Body Distributor offer you a delivery van built exactly the way you want it and the size you want it at a "mass production" price? The answer is Dorsey's "Cargoramic" concept of design and manufacture:

In design, the Champ utilizes the Monocoque prin-

ciple which gives modern aircraft their strength with minimum weight. (Fully-stressed clad aluminum sheets are structurally riveted to extruded Z-type side posts.) The result is a light-weight body with tremendous strength.

Assembly-line manufacture of the entire structure keeps the Champ's cost competitive with bodies that can't touch it for quality. The "optional extra" features are also mass-produced, holding their cost to a minimum.

For the full story, call your Dorsey Body Distributor or mail the coupon.

These and many more optional features immediately available from inventory		
J. J		
SKYLIGHT	BUMPER FLOOR EXT.	WHEELHOUSES
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NARROW OPENING	4 PANEL DOORS	TAILGATE

DORSEY

Your Dorsey Body Distributor is a substantial independent business man with a factorytrained staff to serve you

DORSEY TRAILERS ELBA, ALABAMA

DORSEY TRAILERS . Elba, Alabo	ama
Please send information on Cham	IP truck body.
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COMPANY:	
ADDRESS:	
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THEY STOP THE 230,000 POUND B-47 SAFELY ..



EXCLUSIVE CONTRIGS! MOTOR WHEEL'S BRAKE DRUMS



Centrifuse drums are in the heart of these huge B-47 dual wheel assemblies.

Imagine a 600 mile-per-hour rig with a gross weight of 115 tons highballing down the highway . . . that's the braking job that Motor Wheel's exclusive Centrifuse drums handle day after day, time after time when B-47 Stratojets land.

Why Centrifuse brake drums? Because they are safer, stronger and lighter with molten iron fused to a tough outer steel stamping by centrifugal force. This unique manufacturing process gives toughness and strength which cannot be matched in full cast iron drums.

Centrifuse brake drums are better in every way — they're also cooler, better balanced, more dependable . . . over 100 million have been in service without a single break or explosion. Specify Centrifuse brake drums for your rolling equipment.

Write for the FREE Brochure on Centrifuse Brake Drums



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SERVING THE AUTOMOTIVE INDUSTRY SINCE 1903







BRAKE DRUMS 83

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### GEORGIA

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Indiana Wheel & Rim Co., Indianapolis
Auto Wheel & Rim Service Co., Evansville
Wheel & Rim Sales Co., Fort Wayne
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### OKLAHOMA

Southwest Wheel Inc., Oklahoma City

### OREGON

Auto Wheel Service, Portland

### PENNSYLVANIA

Standard Wheel & Rim Co., Harrisburg Kay Wheel Sales Co., Philadelphia Wheel & Rim Sales Co., Pittaburgh Standard Wheel & Rim Co., Lancaster

### RHODE ISLAND

New England Wheel & Rim Co., Providence



# MOTOR WHEEL DISTRIBUTORS Cover the Nation and Canada

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### TENNESSEE

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Southwest Wheel Inc., Dallas Southwest Wheel Inc., Houston Southwest Wheel Inc., San Antonio Southwest Wheel Inc., Lubbock

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### VIRGINIA

Dixie Wheel Co., Inc., Richmond

### WASHINGTON

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Wisconsin Wheel & Rim, Inc., Milwaukee

### CANADA

Alberta Wheel Distributors, Ltd., Edmonton Automobile Supply Co., Ltd., Winnipeg Ft. Garry Tire & Auto Supplies, Winnipeg Auto Wheels & Supplies, Ltd., Montreal Wheels & Equipment, Ltd., Vancouver Wheel & Rim Company of Canada, Toronto Mutual Supplies, Ltd., Calgary Brakes & Wheels, Ltd., Regina

### Allison "Torgmatic"

Continued from Page 119

per cent grade near Bedford, Pa. On a truck equipped with a mechanical transmission, use of service brakes to maintain a safe speed of 28 to 30 mph boosted brake temperature to 500 deg F. For the same run, the brake temperature of a unit equipped with an automatic transmission with retarder remained practically constant at 60 deg F. during the entire descent at a speed between 30 and 35 mph.

### Results of three

demonstrations of the value of automatic transmissions in eliminating manual gear shifting are shown in Fig. 5. Fewer shifts mean less driver effort, fewer impacts on the driveline.

In general, here are the advantages Allison claims for its

• It provides maximum efficient use of engine power since shift (TURN TO PAGE 128, PLEASE)

### Lightweight Dumper



A frameless weight-saving dumper has been introduced by Marion Metal Products Co., Marion, Ohio. The Model No. FDT-270 is 24 ft long and has a 27 cu yd capacity. A special upper fifth wheel is used with the necessary attachments for the hydraulic hoist. Two lift arms hooked to the hydraulic hoist raise the trailer in the same manner as cable dump trailers.

# PACKARD ELECTRIC BATTERY CABLES

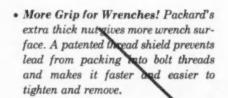
are faster and easier to use



Packard Leadalloy battery cables are original equipment on more trucks, buses and cars, than all other makes combined. Use them for replacement, and you'll save time and trouble, too. Like all Packard Cable, they give you lower cost per mile of operation. Testimony of this is the fact that the majority of transportation companies that have won industry maintenance awards use Packard.

Packard Leadalloy battery cables are readily available through the United Motors System.





 More Spreading Leverage! All replacement battery cable terminals must be spread to be removed from battery posts. Packard's raised shoulders provide the most leverage for faster, asier spreading.

 Other Features include a patented compression sleeve, oil coated contact surfaces, and a raised protective ring.



Packard Electric
Warren, Ohio

"Live Wire" division of General Motors

### Allison "Torqmatic"

Continued from Page 125

points of the transmission are matched to power peak of the engine and are always the same in direct relation to the degree of throttle opening.

• It prevents harmful engine lugging, and stalling with the converter backing up the gear train.

 It starts heavier loads faster and smoother.

• It eliminates shock-load damage to drive line components.

• It increases service brake life since the hydraulic retarder provides adequate braking for normal snubbing requirements and reserves service brakes for normal and emergency full stops.

• It reduces clutch maintenance

by eliminating the conventional friction clutch which needs periodic adjustment and repair.

• It reduces driver fatigue, frees him from the problems of clutching, gear shifting, choosing the right gear, etc.

• For the same reasons, it contributes to driver, vehicle and highway safety, since the driver can concentrate his attention on traffic rather than on the mechanics of driving.

COMMERCIAL CAR JOURNAL has tried to keep abreast of the trend to automatic transmissions in heavier trucks. Here's a selected list of earlier articles to give you futher background on the development.

GMC Offers Hydra-Matic in Heavy Duty Line—Dec. '53, page 84.

Torque Converter Proves Out in Highway Hauling—Feb. '54, page 84.

Allison "Torqmatic" Brake— April '54, page 174.

GMC Twin Hydra-Matic for Heavy Duty Hauling—April '54, page 310.

Automatic Transmission: If-How-When?—May '54, page 94.

International's Automatic Transmission—July '54, page 118—Oct. '54, page 148.

Automatic Transmissions Featured at SAE Meeting—July '55, page 76.

Chevrolet's New Powermatic Transmission—Feb. '56, page 90. Clark Announces Semi-Automatic

Transmission—Sept. '56, page 104.
Tips on Torque Converter PM—
Sept. '56, page 228.

International Has Semi-Automatic Transmission—Jan. '57, page 108.

Clark's New Semi-Automatic Transmission—April '57, page 346.

International's Select-O-Matic Transmission Features Hydraulic Clutch—July '57, page 100.

Spicer Transmission Is Fully Automatic—June '58, page 96.

### END

Please Resume Reading Page 74

CCJ

CITY DELIVERY DRIVER: "WHAT IS THE FIRST THING YOU NOTICE ABOUT A GIRL?"

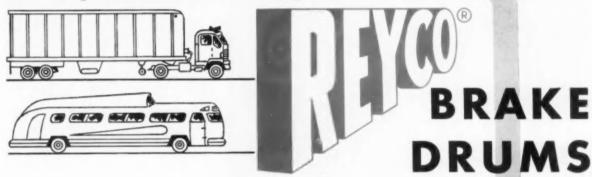
HI-LO OPERATOR: "IT ALL DEPENDS ON WHICH WAY SHE'S GOING."



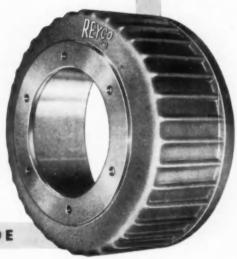
AUTOMOTIVE CORP. MIDDLETOWN, CONN.

# ELIMINATE BRAKE POWER FADEOUT...

due to flexing and distortion under heat and pressure! Play safe with



Performance records prove that Reyco Brake Drums are engineered to safeguard against bell-mouthing and distortion, the common causes of brake power fadeout. Also, Reyco Brake Drums reduce costly downtime resulting from the need for too frequent brake adjustments, relinings and drum replacements. Dependable stopability and reduced maintenance are engineered in and braking problems are engineered out by Reyco. This combination creates profit dollars. Specify Reyco Brake Drums for your fleet!



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You can **RELY** on **REYCO**REYNOLDS MANUFACTURING CO. • SPRINGFIELD, MISSOURI

COMMERCIAL CAR JOURNAL, July, 1958

129



you can depend on ....

### 100% "DRY-ICE" PROTECTION

As the sole refrigerant, rely an Purece "DRY-ICE" for safe, dependable, dry-cold. Eliminates maintenance, light-weight-more pay load. Several types of "DRY-ICE" bunkers available.

### **AUXILIARY REFRIGERATION**

Use "DRY-ICE" to supplement mechanical units and eliminate "hot spots".

### **EMERGENCY REFRIGERATION**

Use "DRY-ICE" when mechanical parts break down. No spoilage. It handles easily and is quickly available through the Purezo network of depots.

You can count on Pureco "DRY-ICE"... and Pureco service. Pureco Technical Sales Service will be glad to study your particular refrigeration problems and help you solve them.

Remember — over 100 Pureco depots from coast to coast are your assurance of dependable deliveries of "DRY-ICE".

Pureco distribution points are all listed in a handy booklet — call or write today for your copy.



### Pure Carbonic Company

A division of Air Reduction Company, Incorporated
Nationwide "DRY-ICE" service-distributing stations in principal cities
GENERAL OFFICES: 150 EAST 42nd STREET, NEW YORK 17, N. Y.

AT THE FRONTIERS OF PROGRESS YOU'LL FIND AN AIR REDUCTION PRODUCT



H ERE is an up-to-date calendar of fleet training courses for 1958. For complete addresses to write to for further information about the courses listed, see the Fleet Course Directory appearing in the November, 1957, issue, page 148.

### **Driver Training**

North Carolina State College—One month long courses beginning July 28, Sept. 1, Oct. 27, Nov. 24.

### **Driver Trainer**

Pennsylvania State University — Sept. 22-26.

### Fleet Maintenance

University of Denver (Colo.) — Sept. 8-12.

Utah State University—Sept. 15-19. University of Alabama—Oct. 6-10. Purdue University (Ind.) — Oct.

University of Kansas-November.

### Fleet Management

University of Kansas (Kansas City, Mo.)—October.

### Fleet Operation

Fleet Operation courses usually meet one night a week for about 10 or 12 weeks. Starting date, where known, is indicated below. City shown in parenthesis is where course will be held.

University of Kansas (Kansas City, Kan.)—Sept. 15.

### Fleet Supervisor

Pennsylvania State University — Sept. 8-12.

Purdue University (Ind.) — Sept. 15-19.

### Reefer School

Michigan State University — Aug. 24-28.

For specific information, write to the Executive Director, Common Carrier-Irregular Route, American Trucking Assns., 1424 16th St., N.W., Washington, D. C.

### Safety Supervisor

Pennsylvania State University— Sept. 24-26. Now"Color-coded"

Brake Blocks
designed for BUSES

# You can step up brake mileage 25% or more with Johns-Manville 4-Star Brake Blocks

HERE'S the brake block designed to give bus operators greatest safety and efficiency... plus the lowest brake cost per mile. It's the J-M 2300 Bus Block—coded with yellow-edge markings for quick identification and foolproof replacement. Rugged over-the-road experience has proved that this block gives 25% to 50% longer wear under the most difficult operating conditions.

To develop this outstanding block, J-M fric-

tion experts first studied the requirements of popular type buses under all operating conditions...then followed up with intensive product research and development. The result: J-M 2300 Bus Block offers the lowest rate-of-wear characteristics plus positive braking effectiveness under both severe and moderate operating temperatures.

Take advantage of the free J-M Brake Advisory Service . . . the plan designed for fleet operators . . . and let a J-M field engineer recommend how you may take full advantage of the J-M 2300 Bus Block. He's highly skilled in the matter of lowering maintenance costs and stepping up braking efficiency with heavy-duty J-M friction materials. Just write or call Johns-Manville Brake Advisory Service, Box 14, New York 16, N. Y. In Canada: Port Credit, Ontario.



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100 YEARS OF QUALITY PRODUCTS

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Announcing.



# A Great New Line of VALVE SEAT INSERTS

### Precision-Engineered...Performance-Tested... COLOR-KEYED for Instant Identification!

RED for original equipment and heavy duty service

BLUE for special heavy duty service

GREEN for engines without valve seat inserts

High quality Permite Valve Seat Inserts, used by vehicle manufacturers as original equipment, are now available for replacement service! Produced in three types of alloy to meet all engine applications, the *color-coat* tells instantly which is right for the job. Last two digits of the part number indicate dimension, and all inserts with the same last two digits are interchangeable. Think what valuable time this can save! What's more, a Permite insert is free from dust, dirt, rust and corrosion when you use it—it's hermetically sealed in a plastic bag!

### Dermite "RED-CM"

(I-7000 Series) The "Red-CM" (Chrome Molly) Insert, coated bright red on the outside diameter. These are used as original equipment, and are also recommended for heavy duty service in engines where operating conditions are severe.

### Dermite "BLUE-CC"

(I-3000 Series) The "Blue-CC" (Chrome Cobalt) Insert, coated blue on the outside diameter. These are used in engines originally equipped with this type insert.

### Dermite "GREEN-M"

(I-1000 Series) The "Green-M" (Molly) Insert, coated dark green on the outside diameter. These are recommended for engines not originally equipped with inserts.

Completely Catalogued Numerically and by Year and Make of Vehicle, with Installation Instructions, Progressive Size Chart, Interchange List and Suggested Counterbore Cutters.

This is one of many new additions to today's bigger and better line of Permite Preferred Parts. For the complete line, call your jobber, or write us. Aluminum Industries, Inc., Cincinnati 11, Ohio

# ermite *preferred*

by vehicle manufacturers / car and truck dealers / garage and service men / fleet operators

### St. Lawrence Seaway

Continued from Page 69

National Accounting and Finance Council some time ago that they would need traffic men trained in international trade if they wanted to make the most of the Seaway's potential. He also forecast a sizeable growth in trailer-ship service on the Great Lakes.

Chicago, Ill. aims to become the nation's biggest inland seaport. It's spending money to assure its success. A \$24 million building program has been completed, and total expenditures may reach \$100 million by 1970.

Trucks are expected to handle about 60 per cent of the Lake Calumet Harbor general cargo, and about half of the port's total volume. As a result, port facilities are planned for maximum efficiency of truck use. Large transit sheds, adequate roadways and a 105-ft wide trucking concourse are among the features. An express highway on the perimeter of Lake Calumet will permit incoming shipments to reach downtown Chicago within a half-hour.

Chicago already handles nearly half the overseas cargo passing from the Great Lakes, and leads in general cargo exports. Overseas shipments were about 250,000 tons in 1956, are expected to reach 11/2 million tons during the first year of the Seaway. According to one recent study, by 1975 the port may handle up to 1.6 million tons of general cargo and 18.5 million tons of bulk cargo in overseas and domestic shipments.

In addition to the city's own population and industrial demands on the port, Chicago will attract traffic from the 7000-mile inland water system of the Mississippi

(TURN TO PAGE 138, PLEASE)

### NIEHOFF **Testing Equipment**

For the Mechanic Who Wants to do the Job Right





T-30 Dwell Meter



T-31 Tachometer



\$35.50

mpression ated to 200 lbs. \$8.90 Pistol Grip

T-26 Co



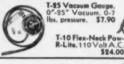




T-14 Voltage Regula-tor Tester, for 6 and 19 volt systems. \$39.50

T-28 Motor Tune-Up Kit: Timing Light, Vac-uum Gauge, Compres-

\$20.50



T-4 Time-O-Lite.





HB-2 Bleeder Tank.

### HOFF & co.

4925 LAWRENCE AVENUE . CHICAGO 30. ILLINOIS

WAREHOUSES: ATLANTA 3, GA., 95 Pine St., N. E. . BOSTON 34, MASS., 250 Brighton Ave. . DALLAS, TEX., 2715 Main Street . NEW YORK 19, N. Y., 250 W. 54th Street . PHILADELPHIA, PA., 1800 Fairmont Avenue BRANCH: LOS ANGELES 15, CAL., 1330 W. Olympic Blvd.

### Frameless Dumper



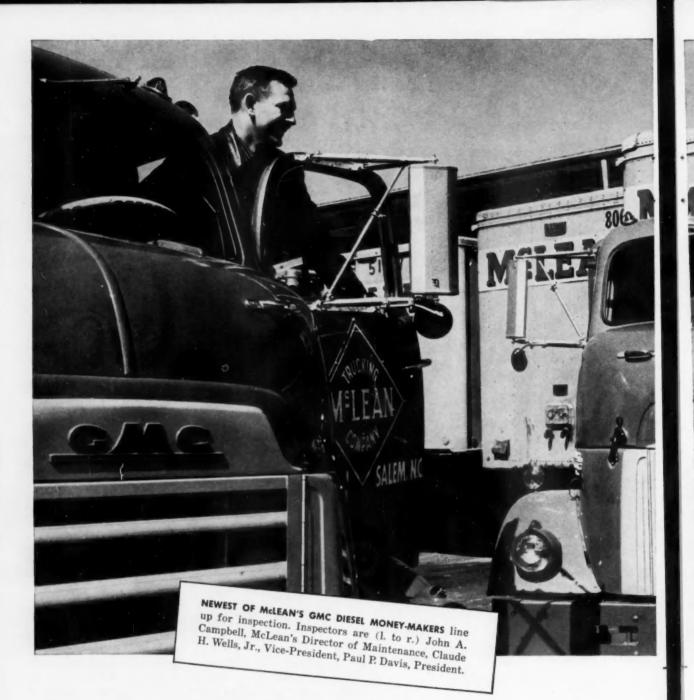
Trailmobile has introduced a new frameless dump trailer with the body hinged at the rear of the tandems. The hydraulic hoist is outside the body and does not affect the cubic capacity as there is no "dog house." Inside length ranges from 21 to 32 ft. The Model No. 254-FG has a floor height of 431/2 in. in full dump position. With the hinged body, the trailer wheels do not leave the ground during dumping operations.



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# One hundred <u>more</u> Money-Makers for McLean!



GMC Money-Makers available in models from 1/2 to 45 tons

When a top trucker buys the same truck year after year-more than 650 in the past 5 years-there can be only one reason:

These GMC Diesel Money-Makers are outperforming-and outearning-any other truck he's tried. And his own operating figures right on his own books-are the proof.

What's more, McLean is only one of many truckers-from one end of America to the other - who've discovered how much GMC's save them: The equivalent of profits from thousands of dollars in new business.

Check the complete facts and all the figures at your GMC dealer's!

GMC TRUCK & COACH - A General Motors Division

### GMC-America's Ablest Trucks 🥯



### . . . Seaway

Continued from Page 134

and will provide interchange facilities for barge-ship cargoes at Lake Calumet.

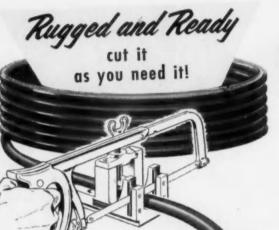
Duluth-Superior, Wis. takes a long-range view of the Seaway's impact, but will be ready for business when traffic starts moving. There's a \$40-million modernization program in progress, including new piers, transit sheds, warehouses and truck access roads. First phase of the program will cost \$10 million and is due for completion next year.

According to a recent study the port may serve a 540,000 sq mile area of the northern states. This area produces 25 per cent of the nation's wheat crop. Port officials look to becoming the nation's largest grain export port by serving this area

Duluth Port Authority has also set up a committee to study and experiment with trailer shipments of package cargo on ore and grain ships. Potential eastbound cargo from Duluth-Superior and Minneapolis-St. Paul areas is estimated at as high as 400,000 tons a year.

At press-time

there are still a lot of questions still unanswered about the Seaway. Among them: What tolls will be charged on the system? What import-export rate schedules will truck operators establish? Will winter freeze-up discourage port development? Will trailer-ship experiments prove successful? How will Federal trade policies affect traffic? But there's one big question that only you can answer: Will you get your share of whatever business the Seaway produces in your area?



### 4

### pressure hose with reusable couplings

BUY YOUR PRESSURE HOSE IN COILS. Save time and eliminate costly inventories of made-up hose assemblies with their many sizes, lengths and types of end couplings. Cut pressure hose as you need it—then simply add an Imperial reusable coupling. When hose is no longer serviceable, just reconnect new hose to same coupling. You get original equipment performance, and better, for oil, gasoline, air, water and hydraulic connections. connections. Write for Catalog 125.

- FN Rubber-Covered Rayon Braid Hose. Working pressures to 300 psi.
   Cotton-Covered Single Wire Braid Hose. Working pressures to 3,000 psi.
   Rubber-Covered Single Wire Braid Hose. Working pressures to 2,500 psi.
   Rubber-Covered Double Wire Braid Hose. Working pressures to 4,500 psi.
   Line includes Reusable Couplings in a wide range of types and sizes. Operating temperatures: -40° to +275° F.









Imperial offers a complete line of Male and Female Straight, Angle and Swivel Adapter Unions.

Imperial No. 384-F sawing vise for 3/16 to  $1\frac{1}{2}$ " O.D. sizes. For sawing wire-braid pressure hose with minimum wear to hacksaw blade. Square, clean cuts. Special hose gripper.

THE IMPERIAL BRASS MFG. CO. 6300 W. Howard St., Chicago 31, III. Dept. CCJ-78 In Canada: 18 Hook St., Toronto, Ontario

Emblem of Quality

Brass Fittings • Flexible Lines • Shut-Off Valves • Drum Faucets • Service Aids • Tubing Tools

### Harbor Officials

Albany: Frank W. Dunham, Jr., Gen. Mgr., Albany Port District Commission, Port of Albany, Administration Bldg., Albany 2, N. Y.

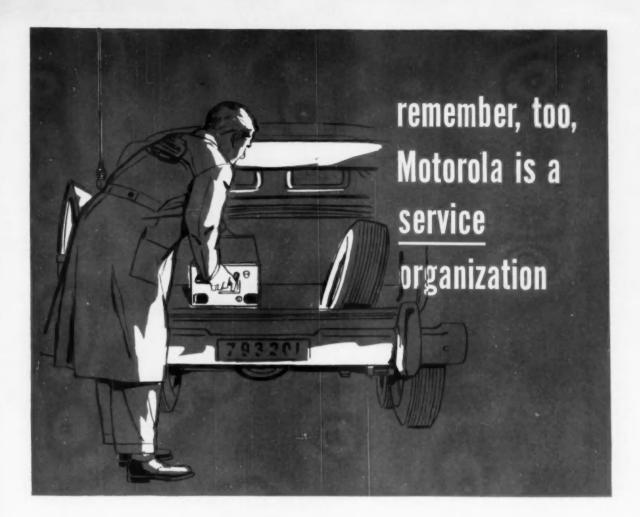
Buffalo: John A. Ulinski, Exec. Dir., Niagara Frontier Port Authority, Buffalo, N. Y.

Chicago: Maxim M. Cohen, Gen. Mgr., Chicago Regional Port District, 360 N. Michigan Ave., Chicago 4.

(TURN TO PAGE 142, PLEASE)



The shovel operator kept missing my truck!"



Motorola's National Service Organization is the largest nationwide service force specially trained to maintain 2-way radio systems to factory standards.

No matter how large your radio system is—how widely distributed the mobile units are—Motorola can provide system maintenance specifically tailored to your requirements. The Motorola field service organization and 800 Authorized Service Stations are your guarantee of dependable 2-way radio operation month-after-month, year-after-year.

### **MOTOROLA**

2-WAY RADIO

MOTOROLA COMMUNICATIONS & ELECTRONICS, INC.
A SUBSIDIARY OF MOTOROLA INC.



For the finest radio communications equipment, as well as the most reliable system maintenance, see Motorola, world's largest exclusive electronics manufacturer and leading supplier of 2-way radio.



CONVERTIBLE and 5,000 pounds lighter

### **NEW Brown Platform Trailer**

Newest addition to the Brown trailer line is a Platform Trailer made of finest aluminum and high strength steel alloys. The 35-foot size weighs just 7,950 pounds. It replaces flatbeds weighing as much as 12,950 pounds. The 40-foot size has a similar weight advantage.

To assure all-around strength, durability and maximum stability, the frame members in both models are of welded high strength tensile steel "I" beam construction. Other standard features include cast aluminum stake pockets, cadmium plated rope hooks and tarp storage pockets. Tiedown rings or chain wells for battening down the load can be provided at a small extra cost.

Removable side racks with tarp bows are furnished with the Model P to permit fast, easy

conversion to an opentop. Two men can make the change-over in just 15 minutes. Racks are provided for front and rear, as well as sides—or the front bulkhead can be fixed to provide storage for racks. Racks are alclad aluminum structurally riveted to sturdy extruded aluminum stiffeners. Standard rack is 48" wide, 72" high and weighs only 44 pounds. (Other height panels are available on request.)

If money is a factor, remember we now have an extensive FINANCING program. Your local Brown Trailer Dealer can give you detailed information on Time-Payment for New and Used Equipment, as well as Leasing of New and Used Trailers. We suggest you contact your local dealer immediately—or write to:

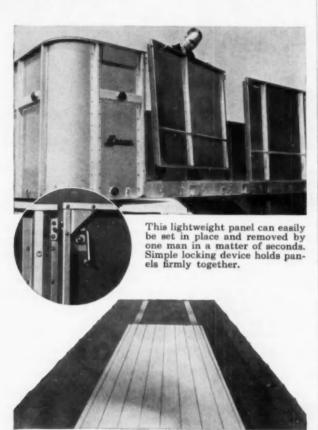


BROWN TRAILER DIVISION

CLARK EQUIPMENT COMPANY Box 275 Elgin, Illinois

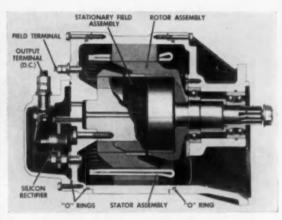
Brown is a trademark of Clark Equipment Company

# Brown Model P Convertible Flat



48 inch wide extruded aluminum center strip runs approximately three-fourths the length of the floor. Wood flooring is used at sides and front . . . 5/4 tongue and groove fir (in the West), 5/4 oak shiplap (in the East). Five rope ties are recessed in floor on each side.

### New Generator is Oil-Cooled, Has No Brushes



A NEW TYPE DC current generator which is oil-cooled, completely enclosed, and which operates without brushes or commutator has been developed at the General Motors Coach Division. It has an output of 215 amps maximum and 135 at idle. It is already in production, says GM, and will first be used as standard equipment on air conditioned transit and suburban model buses on which the electrical load is heavier than on standard models.

A new transistor type

regulator is used with the oil-cooled generator. It is an electronic unit made up of transistors and diodes. Being electrical, it has no mechanical features such as bi-metals, calibrated springs or contact points. Instead, it has silicon and germanium voltage-sensitive semi-conductors which regulate generator voltage. Adjustment is made by a single setting with a screwdriver. The regulator is less than half the size of former models.

In the new generator,

all electrical windings are stationary. There are no brushes or commutators. Conversion to direct current is done through six silicon rectifiers.

The completely enclosed unit is cooled by engine oil, flowed in at gallery pressure and returned by gravity direct to the crankcase. Outside lubrication is eliminated since the circulating oil also lubricates the bearings which are the only moving parts in the generator.

The generator is sealed for its life at the factory. All mating structural parts of the housing are sealed with special high-temperature "O" rings. Generator maintenance is a thing of the past, says GM.

Last year some of these generators were tested on standard model transit buses belonging to several large city bus companies with very satisfactory results.

### Lightweight Fruehauf Platform Tandem

Fruehauf's new "workhorse" platform trailer carries a 50,000 lb payload but weighs 1200 lbs. less than previous models, says the maker. Using 1-beam construction throughout, the 19½-in. main members are inter-welded with 1-beam crossmembers. Main members extend to the platform surface and give added strength for lift truck loading operations.







### EASY TO INSTALL! FITS ALL VEHICLES!

Complete kit includes:

- Ammeter Oil Pressure Gauge
- Twin Gauge Panel for under-dash mounting

Don't take chances! Know exactly how your engine is performing-prevent costly damage and expensive fleet repairs.

Stewart-Warner's dependable ammeter and oil pressure gauge tell you the whole story of engine performance. Warning lights just indicate that generator is not working, or that

there is little or no oil pressure. Stewart-Warner gauges give actual RATE of current flow and EXACT oil pressure in pounds — to help insure safe engine operation, always!

Insist on safe protection of your capital investment. Install a Stewart-Warner "Twin-Panel" on your fleet vehicles—and on your own car, too!

See your dealer for complete details, or write: Instrument Division, Dept. UU-78 1840 Diversey Parkway, Chicago 14, Illinois



STEWART-WARNER INSTRUMENT

STEWART-WARNER

### . . Seaway

Continued from Page 138

Capt. John J. Manley, Port Director, Dept. of Public Works, City Hall, Chicago 2, Ill.

Cleveland: W. J. Rogers, Director, Dept. of Port Control, City of Cleveland, 121 City Hall, Cleveland, Ohio

Detroit: Carlis J. Stettin, Port Director, Port of Detroit Commission, 2400 Guardian Bldg., Detroit 26, Mich.

Duluth: Robert T. Smith, Port Director, Port Authority of Duluth, 909 Alworth Bldg., Duluth 2, Minn.

Milwaukee: H. C. Brockel, Municipal Port Director, Board of Harbor Commissioners, 710 City Hall, Milwaukee 2, Wis.

Oswego: Arthur C. Mengel, Jr., Exec. Dir., Oswego Port Authority, Oswego, N. Y.

Superior: Gustave A. Meyer, Port Director, Superior Board of Harbor Commissioners, City Hall, Superior, Wis

Toledo: E. O. Jewell, Gen. Mgr., Toledo-Lucas County Port Authority, 241 Superior St., Toledo 4, Ohio.

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Waukegan: Wallace A. Green, Port Director, Waukegan Port District, Room 511, 4 S. Genesee St., Waukegan, Ill.

John C. Beukema, Pres., Great Lakes Harbors Assn., North Muskegon, Mich.

Marvin Fast, Exec. Dir., Great Lakes Commission, Rockham Bldg., Ann Arbor, Mich.

George H. Weiss, Chairman, Great Lakes Overseas Freight Conferences, 108 North State, Chicago 2, III.

Ned Collander, Pres., Council of Lake Erie Ports, Ashtabula, Ohio.

Robert F. Matthes, Port Development Specialist, State House, Madison, Wis.

END

Please Resume Reading Page 70

COMMERCIAL CAR JOURNAL, July, 1958

# PROFITS GO UP WHEN TEMPERATURE GOES DOWN!





### HARRISON Car and Truck Air Conditioning Boosts Driver Morale...Lifts Company Prestige!

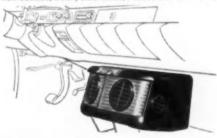
Keep your fleet on its feet all summer long with Harrison Air Conditioning. Your drivers will look their best and work their best in the comfortable, invigorating atmosphere of a Harrison-cooled car or truck. And they'll make a powerful selling impression for your company. Now there are two great Harrison Air Conditioning systems—Custom "under the hood" and the thrifty new Cool-Pack that fits snugly under the dash. So whether you've already purchased your new cars and trucks—or plan to buy—ask your General Motors dealer about Harrison Air Conditioning. It's the cool cargo that will pay its own way every trip.



A GM PRODUCT-AVAILABLE AT YOUR GENERAL MOTORS DEALER

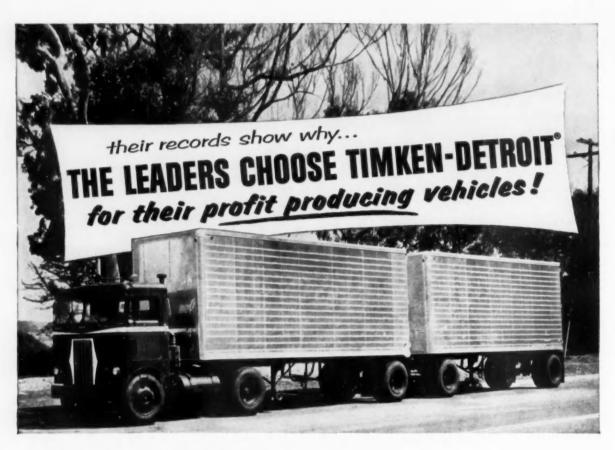


CUSTOM-UNDER THE HOOD- is available on the new Cadillac, Buick, Oldsmobile, Pontiac and Chevrolet.



**COOL-PACK—UNDER THE DASH**—is designed for the new Chevrolet, Pontiac and Buick and most 1958 Chevrolet trucks.

HARRISON RADIATOR DIVISION, GENERAL MOTORS CORPORATION, LOCKPORT, N.Y.



It's no wonder so many of America's biggest long haul carriers choose dependable Timken-Detroit Axles. Their maintenance records show the millions of miles of proven service that makes Timken-Detroit their best buy.

With Timken-Detroit Axles, operators profit 5 ways: • Increased payloads • Long trouble-free service • Unequalled parts interchangeability • Less maintenance • Lower operating costs.

Profit by the advantages that make Timken-Detroit Axles the leaders' choice. Demand the superior axle performance that your equipment needs. Specify Timken-Detroit...the accepted standard.

### WORLD'S LARGEST MANUFACTURER OF AXLES FOR TRUCKS, BUSES AND TRAILERS

Plants at: Detroit, Michigan • Oshkosh, Wisconsin Kenton and Newark, Ohio • New Castle, Pennsylvania



@1958, R-S Corp.

These major, over-the-highway trucking firms are a few of the many leaders who specify TIMKEN-DETROIT AXLES

RINGS BY PACIFIC MOTOR Trucking Co.

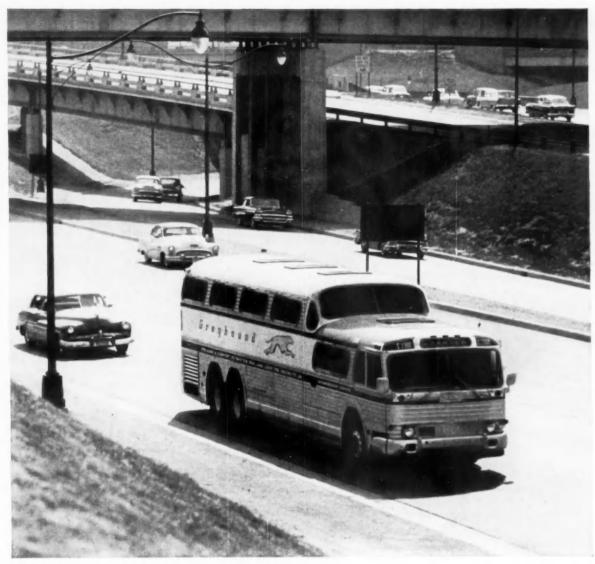
MIGHXXAY EXPRESS LINES 1890.





E. BROOKE MATLACK, Inc.

Products of ROCKWELL-STANDARD Corporation



## Steelcord SAFETY STOPS BLOWOUTS!

### A Billion Highway Miles Prove It! The Safest, Toughest, Longest Wearing Bus Tires Built Are Steelcords by Firestone!

Over all roads at all speeds, STEELCORD bus tires have set the greatest tire safety records of all time. Billions of miles of tough bus service prove conclusively that STEEL-CORD tires end blowout danger.

What's more these bus tires run up 300,000 miles and more on original treads. Because they can't crack, stretch or overheat, they take retread after retread to cut tire costs.

Over 79 miles of high-tensile steel pack tremendous stamina into every STEELCORD bus tire. STEELCORDS give you bead-to-bead blowout protection—the complete tire body is armored . . . not just the tread.

Get full details about STEELCORDS from your Firestone representative. Or write: The Firestone Tire & Rubber Company, Akron, Ohio.





### **Highways Are Being Built**

Continued from Page 84

successfully blocked a raid by the Treasury Dept. and by the Labor Dept. to the tune of \$3.7 million. They had claimed they needed the funds to "administer" their part of the 1956 Highway Act.

Using the same principle, Congressman Jones stopped another

raid that would have diverted \$32.7 million from the Trust Fund to build forest highways and public lands roads. These are usually paid for from general funds.

Diversion at the state level is still a problem. Said National Highway Users Conference Chairman William S. Richardson: "As a matter of fact, efforts to divert state highway funds have never been more rampant than they are right now."

One knotty problem being debated in several states is whether or not electric, gas and telephone companies should be reimbursed from highway use tax revenues for expenses in relocating their facilities because of highway construction. Reimbursement has been voted in some states to give an estimated \$412.5 million to the utilities. Says a recent report from the General Accounting Office: Since other states are expected to adopt similar legislation, the estimated diversion will probably increase substantially in the future.

### Hidden diversion-

inflation—also enters the picture. As prices go up, fewer miles of road are purchased by the same tax dollars. Bureau of Public Roads highway cost index based on 1946 as 100 reached a record 143.4 in the fourth quarter, 1957. For the first quarter, this year, it dropped back to 140.4.

### Reason for the concern

over both direct diversion and inflation is a growing feeling that highway use taxes are about as high as they can go without putting a crimp in highway transportation. NHUC Chairman Richardson says: "The National Highway Users Conference has recognized

(TURN TO PAGE 150, PLEASE)

BROS. BODY CO. HACE BODY CO. HACKNEY BI O. HACKNEY BROS. BO KNEY BROS. BODY CO. ROS. BODY CO. HACKN DDY CO. HACKNEY BRO HACKNEY BROS. BOD NEY BROS. BODY CO. H OS. BODY CO. HACKNE DY CO. HACKNEY BROS HACKNEY BROS. BODY EY BROS. BODY CO. HA S. BODY CO. HACKNEY CO. HACKNEY BROS. E ACKNEY BROS. BODY CO BROS. BODY CO.

BODY CO.



HACKNEY BROS. BODY CO.



"... and you might check my saddle tanks!"



Only with Ramco 10-Up Sets do you get the latest design advance...circumferential expansion... for all applications! You get Chrome C-9 or Spiro-Seal...whichever of these two circumferential oil rings Ramco engineering

Two advanced oil rings...plus Ramco's patented heavy chrome compression rings...it all adds up to maximum efficiency in blow-by control and longer engine life. That's why you're DOUBLE SURE with Ramco to do the job right! For catalog, write us or see your Ramco Jobber.

DOUBLE SURE RAMCOL SETS

RAMSEY CORPORATION, ST. LOUIS 8, MO. SUBSIDIARY OF THOMPSON PRODUCTS, INC.

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### AMERICA'S MOST FUNCTIONAL DESIGN-MOST

# King of the



Fred E. Tucker, Jr.



George E. Paschall President and General Manager

"Our new White 9000 Diesel Fleet gives East Texas Motor Freight efficient and economical power for ETMF growth and profitable operations. The new White Diesels incorporate the finest, most rugged chassis design and the most practical engineering advances because they are custom-engineered to our own requirements."



THE WHITE MOTOR COMPANY



reatest Name in Trucks

**ECON** 

Lower

Higher

Rugge

Top (

### ECONOMICAL POWER-MOST PROFITABLE PAYLOADS...

# Highway

### **Lower Fuel Costs**

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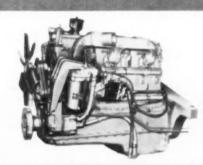
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as just ansion g over e 9000

omical

Get a demonstration of this proven, top-performing diesel—This naturallyaspirated 180 horsepower diesel with the reduced bore runs cooler with lower exhaust temperatures.





### Higher Mileages Before and Between Engine Overhauls

Lower maintenance cost because of longer engine life. Replaceable, wettype cylinder liners assures new engine life after rebuild.





### Rugged Chassis Keeps on Rolling Up the Miles

Compare chassis features! White's rugged chassis with superior cab mountings, chrome manganese heat treated frames, tubular cross mounts, plus bolted construction are exclusive White advantages.



### **Top Quality Components for Top Mileage Operations**

Get proved units like the White-quality high-torque-capacity lightweight single reduction rear axle with the capacity to pull maximum payloads. Rugged and stronger!





### Highways . . .

Continued from Page 146

that highway users should not—and cannot take on more taxes. Our Board of Governors has established a firm policy against federal tax increases. If taxes go higher, will they not act against the advancement of highway transportation? In that case, will not the new

roads which we so badly need have priced themselves out of the market?"

At the same meeting (NHUC's Seventh Highway Transportation Congress), Esso Standard Oil Co. President Stanley C. Hope described the high level of the American economy resulting from highway transportation. But, he says, "To maintain this level, taxes on American highway users must be kept within reasonable bounds. The growth of highway transpor-

tation must be encouraged, not stifled as has happened elsewhere. To insure this continued growth, every highway user must be alert to proposals advocating additional taxes now, or unreasonable taxes in the future."

This then is the highway story at present. . . . A progress report on what has been done, what will be done in the near future, what the current problems are. But what about the long range future?

- Says Federal Highway Administrator Tallamy: Traffic volume forecast for 1975 is now up 15 per cent above earlier estimates.
- Fruehauf Trailer Co. President Roy Fruehauf told stockholders at the company's annual meeting: "Indeed, I believe that the benefits of the new (Interstate) highways, both to the private motorist and to trucking companies, will be so great that the system will eventually be extended from the 41,000 miles now projected to 50,000 miles or more."
- Noting that estimated traffic volume for 1957 was 643 billion vehicle miles, Bureau of Public Roads Assistant Commissioner for Research E. H. Holmes made this prediction: "In looking ahead at this time to 1975, we are anticipating at least 1.2 trillion vehicle miles of travel. . . ."
- It was probably trends such as these that led Bradley D. Nash, Deputy Undersecretary of Commerce for Transportation, to predict recently that by 1970 an entirely new highway program will be needed.

END

Please Resume Reading Page 87



Exclusive
FIBER GLASS DESIGN
gives...



in the

MARQUETTE

"90 SERIES"

AC Arc Welder

Silent,

Service-Free

**Performance** 

TWO SIZES of the Marquette "90 Series"
A.C. Arc Welders are available. One delivers 200 amperes, the other 275. Each can be supplied capacitor-equipped for power factor correction.

MARQUETTE also manufactures a complete line of AC and DC welders, welding electrodes and welding accessories, oxyacetylene welding and cutting equipment. plus the most advanced features of electrical and mechanical design puts the Marquette 90 Series AC Arc Welder in a class by itself. This noise-free, service-free welder performance is made possible by the "Perma-Shield" cabinet design evelusive with Marquette 90 Series

Complete silence of operation

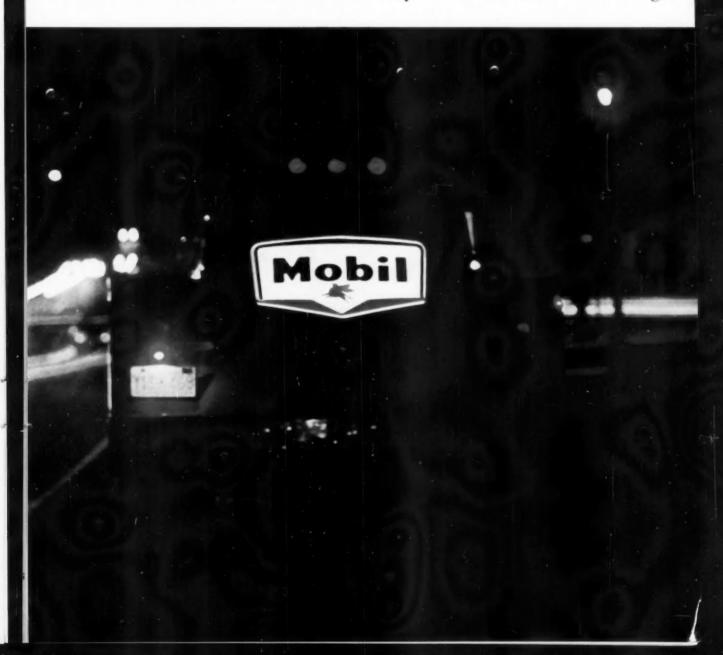
"Perma-Shield" cabinet design—exclusive with Marquette 90 Series Welders. The tough, light-weight, non-conductive, fiber-glass cabinet eliminates resulting vibration noises. Non-conductive, "Perma-Shield" completely solves problems of "eddy currents" and hysteresis... raises welder efficiency by better than 10 per cent. Makes welding fast, dependable and economical.

AND HEAR (it's really quiet) the "90 Series" in action ... ask for a demonstration. Write today for the new "90 Series" bulletinl When It Comes to Welding Come to ARPUETTE

MARQUETTE MANUFACTURING CO., INC. 307 E. HENNEPIN AVENUE MINNEAPOLIS 14. MINN.

### BOLD AND BRIGHT BY DAY OR NIGHT

reflective color is the modern way to better fleet markings

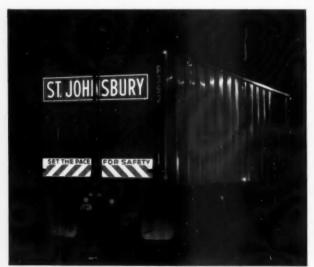




# .... the bold bright look is



MANUFACTURERS' FLEETS become rolling billboards, advertising their products 24 hours a day in bright "Scotchlite" Reflective Sheeting. You show name, trademark or package in true, vivid color wherever your trucks roll.



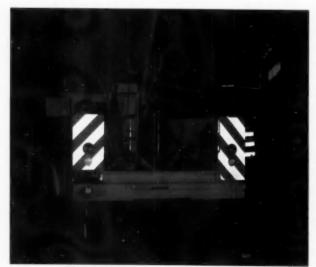
COMMON CARRIER FLEET operators report big dollar savings in operational costs, due to speed and economy in application and the rugged on-the-road durability of striking markings of colorful "Scotchlite" Reflective Sheeting.

GLENDENNIN G

GLENDENNING MOTORWAYS.INC.

566

# "Scotchlite" Reflective Sheeting



**PUBLIC UTILITY FLEETS** flash a built-in warning to approaching motorists. The vivid reflective color of "Scotchlite" Sheeting helps promote safety on the road anywhere in any weather at any hour. It's good public relations.

### the modern marking material for cost-conscious operators who are proud of their fleets

They're bright at night. And all day, too. Because these modern markings are reflective, they can be seen 24 hours a day in any kind of weather. You get increased safety for your fleet. You get 24-hour-a-day advertising for your service. You get public relations and prestige values wherever your trucks roll. And you get modern economy, too, from the ease of initial application to the long onthe-road life of these rugged markings. Get modern markings and throw away your paint cans. See your 3M Representative soon and get the facts on how you save money with the bold, bright reflective color of "Scotchlite" Sheeting.

SCOTCHLITE BRAND

REFLECTIVE SHEETING





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DAY AND NIGHT VISIBILITY is a built-in advantage of "Scotchlite" Sheeting. These distinctive markings are easy to see by day...and even easier to see by night. When caught by an approaching headlight beam, they flash fast identification of your units and give you greater safety.



APPLICATION IS EASY. Strip off the backing to expose adhesive. Line emblem up in position. Then apply pressure. That's all there is to it. Larger emblems are quickly applied in sections. You get big dollar savings in labor and you end costly truck downtime for painting and repainting.



**DURABILITY** of these rugged markings has been proved by performance time and time again. Take Greyhound Lines, for example. These markings of "Scotchlite" Reflective Sheeting are still in good shape after 5 full years of contributing to safer operations in any weather and at any hour.

### You save money with markings of "Scotchlite" Reflective Sheeting

You save money on every unit because this easy-to-apply material cuts marking time and manpower expense. The longer life of colorful "Scotchlite" Reflective Sheeting means further savings and less unit downtime. Through bright allweather visibility of these markings you save, too, in terms of safety on the road . . . both for your own units and for other drivers. The 24-hour-a-day advertising and public relations value is a built-in benefit.

See your 3M Representative soon for the full story on the bold bright look of "Scotchlite" Reflective Sheeting. Or write for further

details today to: 3M Company, Dept. KC-68, St. Paul 6, Minn.

REFLECTIVE SHEETING



MINNESOTA MINING AND MANUFACTURING COMPANY... where RESEARCH IS THE KEY TO TOMORROW

### ICC Finds Driver Responsible For Accident Near Caledonia, Minn.

THE INTERSTATE Commerce Commission blamed reckless operation of a heavily-loaded commercial vehicle by "an unqualified, inexperienced" driver for an accident near Caledonia, Minn., in which a truck collided with a school bus, killing one child and injuring six others.

The accident occurred Oct. 8, 1957, at 8:15 A.M. when the school bus, driven by Joseph Wagner of Caledonia, was descending a hill and made a routine stop to pick up two passengers. The ICC investigation stated that the bus was struck in the left rear corner by a truck driven by Shirley Joseph Zimmer for Darling & Co., Chicago, After colliding with the bus, the truck continued forward, again striking the bus just above its floor level and tearing away half of the left side of the bus. The seats in the damaged portion were ripped loose and twisted.

#### Zimmer stated he

was traveling 45 to 50 mph when he saw the bus on the hill, the report said. He tried to check his speed by pumping the brakes instead of making full application because of the wet pavement and the possibility of skidding. When he attempted to pass the bus on the left, applying his brakes simultaneously, the truck went into an uncontrollable skid and struck the bus.

#### The Commission reported

that the damage to both vehicles, plus the fact that the truck moved the bus 159 ft after the collision, indicated a terrific impact force caused by excessive speed even after severe brake application. The Commission also said it was apparent the driver failed to take the most elementary precautions upon approaching the rear of a stopped bus.

The investigation showed the driver of the truck had reported for duty on the day of the accident without sufficient rest. Delayed reaction to danger and apparent bad judgment must be charged in some measure to his fatigued condition, the report said. It also disclosed that Zimmer lacked experience on the type of vehicle he was driving and that his previous employment and driving record showed unstable qualities which cast serious doubt on his qualifications as a driver of commercial vehicles. He

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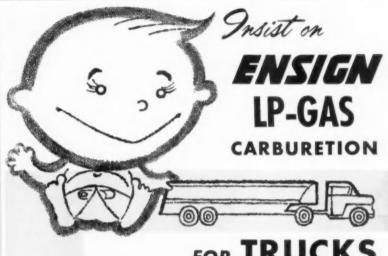
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had been employed by Darling & Co. for less than a month at the time of the accident.

#### The Commission cited that

portion of the ICC motor carrier safety regulations which requires every driver to be competent by reason of experience or training to operate safely the type of vehicles which he drives. The Commission also cited the regulations requiring motor carriers to take into consideration past records of persons employed as drivers and prohibiting the driving of commercial vehicles by persons who are fatigued.

"It is imperative," the Commission said, "that the management of companies operating vehicles in the conduct of their business, devote careful attention to the selection of persons with competence and sound background to drive such vehicles."



### FOR TRUCKS AND COMMERCIAL VEHICLES

Why be satisfied with hit and miss engine performance on LP-Gas? Years ago Ensign took the guesswork out of LP-Gas carburetion so that today there is no mystery about the conversion of your gasoline engines, trucks and commercial vehicles to this amazing fuel. Regardless of the vehicles you operate, your Ensign dealer can supply you a complete Ensign LP-Gas carburetion group easily adaptable. Begin now to show remarkable profits and savings in the operation of your truck or fleet. Ensign's experience in carburetting gas and gasoline engines goes back nearly fifty years. Ensign representatives are in nearly every principal city. INSIST ON ENSIGN — ACCEPT NOTHING LESS!



Send today for "THE STORY OF LP-GAS

ENSIGN CARBURETOR COMPANY

1551 E. Orangethorpe, Fullerton, California

1551 E. Orangethorpe, Fullerton, California Branch Factory: 2330 W. 58th Street, Chicago, Illinois LP-GAS









# This Champion"know how"helps you get



Champion representative Joe Steadman (right) and Field Engineer Gene Manley (left) point out to Matthew O'Brien (center) of Chicago's Fleet Maintenance, Inc., one cause of power loss (see Service Tips)

### **Exclusive Technical Help**

Technically trained Champion teams can help you get perfectly functioning ignition systems — a "must" for top spark plug performance. If necessary, Champion Field Engineers, recognized ignition experts, can team up with experienced Champion representatives to help your fleet get top spark plug and ignition performance. These men are backed by "know how" collected through the world's largest research and engineering organization devoted exclusively to spark plugs.

### **Exclusive Product Features**

A Champion ceramic insulator is held in  $3,000^{\circ}$  flame immediately after being taken from block of dry ice at  $-100^{\circ}$ . (Arrow points to frost on insulator.) Champion's insulators withstand these severe heat shocks – prove they have the durability to deliver top spark plug performance under all conditions.



CHAMPION SPARK PLUG

## top spark plug and ignition performance

### CHAMPION SERVICE TIPS

#### Vacuum-Control Diaphragm Leakage

FOR BETTER TRUCK PERFORMANCE

On trucks equipped with full vacuum-operated spark advance, it's good practice to periodically check the vacuum-control diaphragm for leakage. Even though basic ignition timing is set correctly, insufficient advance at higher rpm's can drastically reduce power output.

Don't "correct" this condition by overadvancing basic timing. This will encourage harmful detonation, higher temperatures and plug burning in the lower speed ranges.

#### **Engine Lugging Must Be Avoided**

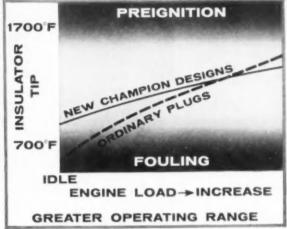
Increased maintenance costs and even expensive repair bills have often been traced to individual driving habits. Chief culprit is the practice of lugging an engine or not downshifting promptly when engine speed drops on a long pull. This can be especially harmful in a modern short-stroke, high-compression engine where full throttle operation at sustained low engine speed may cause overheating and lack of lubrication. In extreme cases, the piston rings will break through the cylinder wall oil film, establishing a scuffing condition. Detonation and preignition may result, causing spark plug insulator fracture and other more serious engine damage.

With these facts in mind, many fleet operators have found that proper driver training will lower costs nearly as much as correct shop practices.



### **Special Application Plugs**

Champion's new auxiliary-gap spark plugs keep engines involved in low-speed operations firing smoothly far longer than ordinary plugs. The auxiliary-gap illustrates Champion "know how" . . . constantly at work designing spark plugs that deliver the best possible performance in specific types of operations.





### Wider Operating Range

This graph (above) shows how new Champion plug designs give you a wider operating range. Hotter in the low power range to fight fouling, Champions run cooler at peak engine loads—give greater protection against preignition. This is another good reason why your fleet should be 100% Champion!

COMPANY . TOLEDO 1, OHIO

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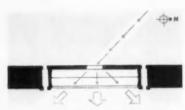
### Shop Skylight Selects Sun's Best Rays

PREFABRICATED SKYLIGHT which "selects" only the most desirable rays of sunlight the year 'round is being manufactured for truck shops and other fleet buildings.

The New Device

is known as Toplite. Its function is based on use of solar-selecting prisms which "open" and "close" to admit only cool, even light while rejecting the sun's hot rays. Toplite was developed by Kimble Glass Co., Toledo, Ohio, a subsidiary of Owens-Illinois Glass Co.

It functions according to the sun's position in the sky at any time of the year. Installed in relation to the north-south axis of a building, the prism of the glass units remain



FRANSMITS NORTH LIGHT Maximum transmission of light from the north sky is a highly desirable quantity in top lighting because of its uniformity and freedom from clare and solar heat. Note how the priori structure of Topine gives ethiciant transmission.

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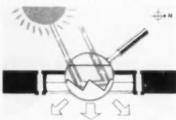
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ACCEPTS WINTER SUN Since the low winter inn is weak in comparison to the high summer sunmaximum transmission in a skylight material during winter months is highly desirable. The duarram illustraces on efficiently. Levels, a comparish during the time.



REJECTS SUMMER SUN. Toplite Roof Panels have been designed to reflect intense sanlight during the hot spring and summer months thus reducing panels brightness and total solar heat gain. At the same time, they transmit an adequate quantity of cool north light

"open" on their north side to transmit daylight in all seasons. However, the south side of the same prisms "open" and "close" according to the season, the time of day, and the sun's sky position. When the sun is high in the sky, its rays are bounced back off the Toplite prisms as though they were striking a mirror.

The Toplite Panels

are available in five stock sizes ranging from 2 x 2 to 6 x 3 ft. Two types are available—one a flange type permitting installation directly on the roof deck; the other for installation on prepared masonry, wood or metal curbs.



# BRANICK

AIR-OPERATED

### ALIGNMENT JACK

EACH JACK LIFTS 3000 LBS. QUICK-LY, EASILY WITH LITTLE EFFORT on 125 lbs. of air line pressure.



### BIGGER SAVINGS THRU FASTER-EASIER LIFTING OPERATIONS

The Branick air-operated ALIGNMENT JACKS provide fast, efficient, labor-free lifting of cars and trucks for all types of Front and Rear-End-Work. Each jack will raise 3000 lbs. on 125 lbs. of air line pressure; each additional 20 lbs. will raise 450 lbs. Jack

height 10" with a stroke of 6". An additional 4" screw adjustment will raise jack to overall height of 1934". Oil Reservoir and strong construction will provide years of dependable service.

Speeds STEERING GEAR ADJUSTMENT CASTER & CAMBER INSTALLATION & ADJUSTMENT HING PIN & TOE-IN ADJUSTMENT, ETC.

WRITE TODAY FOR OUR COMPLETE CATALOG AND FLYER giving complete details on this new Branick Equipment.

BRANICK MFG. CO. INC.

# Stainless Steel tankers keep shipments clear as drinking water

At Durez Plastics Division, Hooker Electrochemical Company, North Tonawanda, New York

The Stainless Steel tankers that carry formaldehyde to Hooker's Durez plant in Kenton, Ohio, from North Tonawanda are also used for customer shipments of phenolic resin and phenol, which must be kept crystal clear.

"Only our Stainless Steel tankers can be used in this triple-duty role," says Durez Traffic Manager A. E. Finger. "One of the non-stainless trailers is so pitted and imbedded with phenolic resin that it can never be suitably cleaned. The only material it can carry now is resin and when there are no shipments of that kind called for, the tanker stands idle.

"Those old tanks can't take formaldehyde. It are right through the lining of one last year and the unit was out of service ten days for repairs.

"Our Stainless Steel tankers carry formaldehyde with no danger of breakdown from corrosion. Resin washes right off the hard, smooth finish and when phenol is loaded it isn't muddied by residue."

When you buy tank trailers remember this: Thousands of Stainless Steel trailers have been built, and not one has ever been known to wear out.

USS is a registered trademark

United States Steel Corporation—Pittsburgh
American Steel & Wire—Cleveland
National Tuba—Pittsburgh
Columbia-Geneva Steel—San Francisco
Tennessee Coal & Iron—Fairfield, Alabama
United States Steel Supply—Steel Service Centers
United States Steel Export Company





This Stainless Steel tanker carries formaldehyde as well as phenolic resin and phenol. Because the Stainless resists corrosion and can be thoroughly cleaned, there is no danger of spoiling one load with residue from another.



### **PRODUCTS**

DESCRIBING RECENTLY ANNOUNCED PRODUCTS AND EQUIPMENT OF INTEREST TO MEN CONCERNED WITH TRUCK, BUS AND CONSTRUCTION FLEET MANAGEMENT



### **Delivery Truck Ramp**

from Magline, Inc. 1900 Mercer St., Pinconning, Mich. is made of magnesium and can be easily positioned by one man. The perforated center deck area is self-cleaning, assuring a non-slip walking surface. Flanking deck areas are smooth for easy hand truck wheeling. Side guard rails prevent truck run-off. The ramp can be stowed under the truck frame or in the body. It is made in widths of 26½ in. and 39 in., and in lengths from 7 to 16 ft. Maximum load capacity is 1500 lb.



### Sliding Fifth Wheel

Holland, Mich. is adjustable to 15 different positions in a 23-in. span. It is fully controlled by the driver from the cab. The Model No. 2500-36 is locked in place by lateral wedge-shaped keys inserted under heavy spring pressure. To move the fifth wheel, the driver need only release the keys by an air control located in the cab.

from Holland Hitch Co.



### **Heavy Duty Transmission Jack**

from Automotive Division of K. R. Wilson, Inc.
Arcade, N. Y.

handles transmissions, differentials, torque converters and assemblies. The new jack permits one man to remove or install heavy truck transmissions. Named the KRW Model No. 7020 transmission jack, it features an adjustable cradle with a controlled forward tilt of 36° and a back tilt of 12°. Maximum side tilt is 10° each way. The hydraulic pumping lever swings to any position allowing the operator to control the jack from either side. The lifting arms can raise the unit to bench height for working convenience.

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### **Hydraulic Impact Wrench**

from Owatonna Tool Co.
341 Cedar St., Owatonna, Minn.
exerts between 900 and 1000 ft lb of torque. The wrench
has a one-inch square drive and operates from any hydraulic power source up to 6.5 gpm and 1000 psi. Free speed
of the wrench is 650-700 rpm. Impact rates is 1200 per
minute.

### Truck Tire Changer

is

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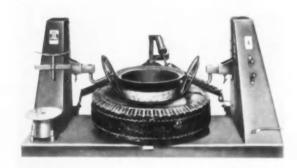
from May Brothers Mfg. Co.
Wyandotte, Mich.
cuts tire changing time to 90 seconds on large tubeless
tires and to three minutes on tube-type tires. Called the
"Mighty M" Truck Tire Changer, it handles tube-type
tires ranging from 7.00 x 17.5 to 12.00 x 24.5. The machine is air-operated and controlled by two valves. The
tire to be changed is placed on the turntable which revolves as air pressure moves the two cup-shaped discs
downward applying pressure to the bead. The curved edge
of each disc floats under the rim without damaging the
bead, says the manufacturer. The machine is 80 in. long,
27 in. wide and can be operated by air, gasoline or electric



### Air Brake Foot Valve

from Homer T. Seale, Inc.

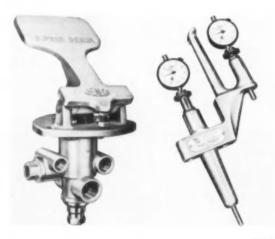
13530 Nelson Ave., City of Industry, Cal.
is designed for use in COE's and other cabs where space
is limited. The Sealco Model No. 2100 has a new style
pedal for toe-swing application and has extremely fine
metering in the low pressure range from 0 to 15 lb. The
valve has Sealco's "Quick-Fix" design permitting normal
service repair on the vehicle with no line disconnections
required.



### **Cummins Diesel Timing Analyzer**

from Columbia Exporters, Inc. 730 S. E. 11th Ave., Portland 14, Ore. is made by the McKinley Corp., and is used for checking and adjusting fuel injection timing and for locating broken or worn lower rocker shafts, rollers or pins. One gage shows the correct position of the piston in relation to the start of the injection period. The other shows what push rod adjustment is needed to correct the timing. In use, the Model No. M 1700 is mounted on one of the injector hold-down studs after the injector and rocker arm have been removed.

(TURN TO NEXT PAGE, PLEASE)



### **New Product Descriptions**

Continued from Page 161

### Cab Heater

from Rue R. Elston Co. 2223 Fifteenth Ave. S. Minneapolis 10, Minn.

will maintain any temperatures between 55 and 95 degrees and is designed to be adaptable to all types of cabs. The RJ-7000 is an ICC-approved propane-fired unit. It is 36 in. high, 14 in. wide and 5 in. deep. It operates on a heat exchanger principle. Outer shell of the heater is insulated with fibre-glass. The unit does not require electric power. It has a 9000 Btu output. Weight is 60 lb.

### Sliding Fifth Wheel

from Dayton Steel Foundry Dauton 1. Ohio

is an adaptation of the standard Dayton fifth wheel. It provides an adjustment range of 28 inches in increments of four inches. Adjustment pins are locked in place with coil springs. The 36-inch fifth wheel, with adjustment mechanisms and rails weighs 387 lb. It extends 9 1/16 in, above the chassis and has pressure grease fittings for lubrication. A kit is available to convert standard Dayton fifth wheels to sliding units.

### designed with the FLEET in mind!

- less vibration
- less maintenance cost
- ... yet they cost no more!



We want to prove these statements. We have picked the names of ten fleets out of a hat. If the maintenance supervisor of these fleets will write to us on company stationery, we will send, free of any obligation, a complete Arrow West Coast Mirror, Model No. 642, as illustrated. Try it on one of your units.

Adley Express Co New Haven, Conn.
Akers Motor Lines
Associated Transport, Inc N. Y. 17, N. Y.
Baltimore Transfer CoBaltimore 5, Md.
F. J. Boutell DriveawayFlint, Mich.
California Cartage CoLos Angeles, Calif.
Central Motor Lines, IncCharlotte, N. C.
Coastal Tank Lines
Alton Box Board Co
Burlington Industries, Inc Greensboro, N. C.

Arrow's balance-designed mirrors reduce vibration and distortion to a minimum! Pittsburgh plate glass sealed copper back silvering guaranteed to last a lifetime — heavy gauge seamless tubing — simple compression adjustment permitting positive locking for any driving need. Second-best to none — it's the mirror with vision. Ask your jobber to show you the complete Arrow line.

Akers Motor Lines
Associated Transport, Inc N. Y. 17, N. Y.
Baltimore Transfer Co
F. J. Boutell DriveawayFlint, Mich.
California Cartage CoLos Angeles, Calif.
Central Motor Lines, Inc Charlotte, N. C.
Coastal Tank Lines
Alton Box Board Co
Burlington Industries, Inc Greensboro, N. C.

GEORGETOWN 6, DELAWARE

COMPLETE AUTOMOTIVE LIGHTING SYSTEMS, SAFETY EQUIPMENT AND MIRRORS

FLEET SAFETY EQUIPMENT REFERENCE GUIDE Write for this useful publication on your company letterhead today

### Truck Radio

from Service Parts & Accessories Supply Div. Chrysler Corp., Detroit, Mich.

attaches to the inside of the roof panel above the center of the windshield. The MoPar unit is transistorpowered, has a specially mounted flexible whip antenna which eliminates



problems with the conventional antenna lead. The radio functions on a nominal 12-volt current, and while it is custom-built for Dodge trucks it may be installed on other vehicles with 12-volt systems.

#### Dome Lamp

from Betts Machine Co. Warren, Pa.

can be flush or face mounted in a variety of applications including the



(TURN TO PAGE 164, PLEASE)

Right for the job because they're built for the job

Evans heaters keep windshields clear, drivers comfortable—even in snow and sleet!

## EVANS HEATERS ARE RIGHT FOR TRUCKS BECAUSE THEY'RE BUILT FOR TRUCKS

It goes without saying that your trucks have to be truck built all the way through. Including the heaters!

You'll find *every* Evans heater is *truck built*. Each is designed to meet the specific requirements of the type truck it is to serve. This means both correct BTU output *and* proper heat distribution . . . something a warmed-over car heater cannot provide.

It also means longer heater life. To prove it, Evans backs every heater with a parts "repair or replace" warranty good for a full year or 50,000 miles, whichever occurs first.

EVANS PRODUCTS COMPANY
PLYMOUTH, MICHIGAN

There's an Evans truck-built heater available for every size and type truck in *your* fleet. For complete information, write: Evans Products Company, Dept. Q-7, Plymouth, Michigan.

Regional Representatives: Cleveland, Frank A. Chase Chicago, R. A. Lennox Co., Inc.; Detroit, Chas. F. Murray Sales Co. Allentown, Pa., P. R. Weidner

#### EVANS PRODUCTS COMPANY ALSO PRODUCES:

tailroad loading equipment, bicycles and velocipedes, "Evanite" e fir plywood, fir lumber; "Evanite" e battery separators, Evanite hardboard, Haskelite doors, Evanite Plywall.





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### **New Products**

Continued from Page 162

cab, compartment, or as a back-up unit. The B40-D cast aluminum lamp is vapor sealed with an internal "O" ring between lens and housing.

### Lift Gates

from Anthony Co. Streator, Ill.

feature a new road shock arrester



which prevents up and down movement of the lift gate when the truck is in motion. The redesigned models are available in rated capacities of from 1200 to 4000 lb. All are available with or without a low angle ramp type platform.

### Cylinder Hone

from Clark Feather Mfg. Co. Fort Morgan, Colo.

is a self-adjusting deglazer for cylinders of 2 to 7 in. diameter. It fits ¼-in. or larger drill chucks, uses two 220



or 400 grit abrasive cutting stones and one felt wiper shoe. Each head is swivel mounted and easily replaced. Heavy duty construction of the CF-62 includes a flexible joint in the drive shaft for self centering.

### **Underbody Hoist**

from Marion Metal Products Co. Marion, Ohio

carries a capacity rating of 25 to 30 tons. The HD-88 is a twin cylinder double arm type hoist with a Class 14



HABMA rating. Lift arm assembly is an integral steel plate weldment which has no crosshead. Piston rods have solid steel knuckles which attach them to the arm structure. Nonmetallic type bearings are used at all moving pivots, including the lift links (TURN TO PAGE 166, PLEASE)

....,

### You Can Build Better

Value

in your TRUCK BODIES



Hinge No. 5832 Box Door Lock No. 4853 Van Door Lock No. 5631

### **B** berHARDWARE

A well designed, ruggedly constructed body requires good hardware to fulfill its purpose.

Poor hardware wears unduly and breaks under stress—reflecting upon the ability and policies of the builder.

Fully realizing these truths Eberhard has always made products of quality—a fact that is fully appreciated by better builders in the industry.

You'll find everything you need in the Eberhard line, and you can install and recommend them with assurance that they "will not let you down".

Write for the Catalog

### **EBERHARD MANUFACTURING COMPANY**

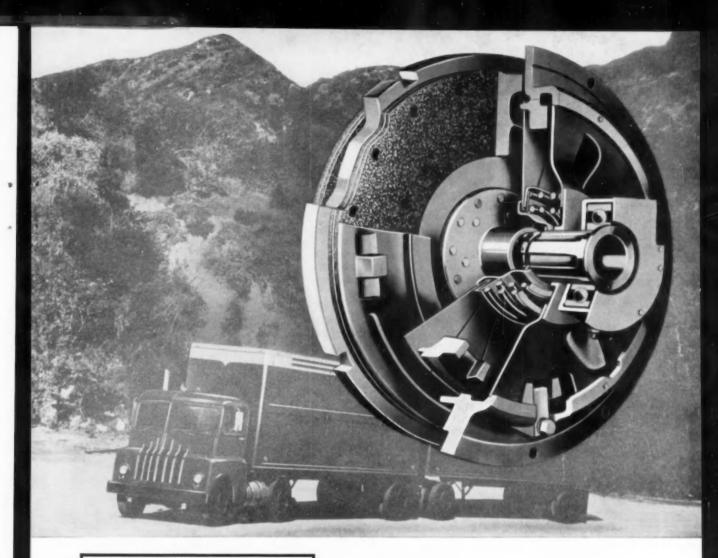
Everts Ave. • Cleveland 14, Ohio DIVISION OF THE EASTERN MALLEABLE IRON COMPANY

LONGRUN

TRUCK BODY HARDWARE BY

EBERHARD

HE MOST COMPLETE LINE AVAILABLE



Western Fleets Report:

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### 150,000 to 200,000 trouble-free miles from Spicer H-D Clutches

Western terrain means rugged service for clutches. Yet, one West Coast operator says, "The only time we touch the Spicer Clutch is at the end of 200,000 miles. Then, we rebuild the engine and overhaul the clutch - whether it needs it or not."

Still another fleet owner states, "We don't even bother with preventive maintenance for our Spicer Clutches. They're absolutely trouble-free from one overhaul period to another - or about 150,000 miles."

Make sure your clutches last at least as long as the engine by installing Spicer Heavy-Duty Clutches. They're available in a unitized assembly . . . including release bearing, bearing housing and yoke. Specify Spicer on your next job.

For further information or technical assistance contact the Dana Engineer.



Toledo 1, Ohio

DANA PRODUCTS Serve Many Fields:



AUTOMOTIVE: Transmissions, Universal Joints, Propeller Shafts, Axles, Powr-Lok Differentials, Torque Converters, Geor Boxes, Power Take-Offs, Power Take-Off Joints, Clutches, Frames, Fargings, Stamp-

INDUSTRIAL VEHICLES AND EQUIPMENT: Transmis-sions, Universal Joints, Propeller Shafts, Axles, Gear Boxes, Clutches, Forgings, Stampings. AVIATION: Universal Joints, Propeller Shafts, Axles, Gears, Forgings, Stampings. AVIATION: Universal Joints, Propeller Shafts, Axles,
Gears, Forgings, Stampings.

Mary of these products manufactured in Canada by Hayes Steel Products Limited, Merritton, Ontario.

RAILROAD: Transmissions, Universal Joints, Propeller Shafts, Generator Drives, Rail Car Drives, Pressed Steel Parts, Traction Motor Drives, Forgings, Stampings.

AGRICULTURE: Universal Joints, Propeller Shafts, Axles, Power Take-Offs, Power Take-Off Joints, Clutches, Forgings, Stampings.

### **New Products**

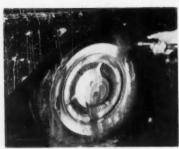
Continued from Page 164

and cylinder base ears. Combination leakproof seals and rings are used on the pistons.

### Car Wash System

from Century Enterprises, Inc. Tulsa, Okla. involves applying two coats of

"Sprayaway" chemical and a water rinse. Fleet cars, the manufacturer



says, can be washed and rinsed in less than 10 minutes at a cost for the chemical of 6 to 10 cents per car. The system includes a 100-gal chemical tank, compressor unit, and the chemical solution.

#### Tire Buffer

from Automatic Vulcanizers Corp. 16 Hudson St., New York 5, N. Y. provides an electric-powered method for fast buffing and cleaning of tubeless tires. The unit is six inches long, fits in the palm of the hand. Its low (540) rpm rating prevents burning and scorching of the rubber.

### Metal Cleaner

from Magnus Chemical Co. Dept. CCJ, South Ave. Garwood, N. J.

is a powdered acid base compound which contains a wetting agent and activator. Developed for use on very



dirty aluminum and stainless steel tankers or truck bodies, Magnus 89-B is applied in a water solution. Surface is wetted down with plain water first, rinsed after application to individual panels and re-rinsed when one side of the unit has been cleaned.

### **Hydraulic Starter**

from American Bosch Div. 320 Fulton Ave., Hempstead, N. Y. uses a hydraulic rather than an electric motor. Known as the "Hydroter," it uses oil under pressure to run a fluid starter motor which turns the engine. It may be used with gasoline or diesel engines. Designed for fast cranking speed and high cranking torque, it is said to develop nearly 400 engine rpm in 34 second. It needs no outside power supply, since it has a manually-operated pump with which to build up pressure.

(TURN TO PAGE 168, PLEASE)

### REPAIR Truck Tubeless Tire **PUNCTURES**

Approved EVERYWHERE !

Permanently Safe!

DILLECTRIC "DEEP-CURE" VULCANIZED REPAIRS



DILLECTRIC "U" CLAMP OUTFIT

Includes truck tire "U" Clamp with sec-

ondary and ground wires, No. 6633

Order No. 6691-G

### Always use this SAFE SURE Method

1 BUFF injury area thoroughly to completely remove all graphite mica and soap lubricants. Do not buff through liner.

2 LUBRICATE puncture hole with Pressure-Lube Gun and insert Filler Rubber with Threading Tool to seal and prevent moisture from entering puncture hole and deteriorating fabric plies.

3 APPLY "Dillectric" Nylon Patch over injury and vulcanize repair with Dillectric No. 6685 and "U" Clamp.

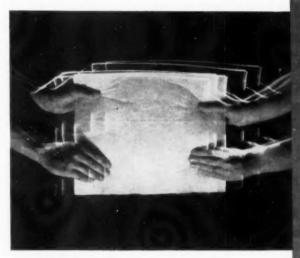
Buffer Kit, No. 5213-T Threading Tool, No. 5218 Pressure-Lube Gun and package of 25 No. 6626-25 Dillectric Nylon Patch units with Filler Rubber. Order from your supplier or write for complete details

THE

MANUFACTURING COMPANY

700 East 82nd St., Cleveland 3, Ohio

# Try these 3 tests with Pittsburgh Superfine Fiber Glass Insulation



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PULL IT—see how strong Pittsburgh Superfine is! It's built to last wherever you install it. It retains this same strength indefinitely. Won't disintegrate or rot with age.



PRESS IT—and see how it returns to its original shape. You can compress Pittsburgh Superfine for long periods of time, yet it will always spring back to its former shape!



**GIVE IT A BEATING**—and see how Pittsburgh Superfine absorbs the shock, and comes back. Pittsburgh Superfine loves rough handling.

### PITTSBURGH SUPERFINE

FIBER GLASS is great for insulating against heat or cold or noise. It's light-weight, cuts easily to correct size . . . is rot-proof, fire-resistant . . . handles easily, avoids skin irritation . . . saves installation time. Try it!

For complete information on Pittsburgh Superfine, call your nearest PPG Sales Office, or write to Pittsburgh Plate Glass Company, Fiber Glass Division, One Gateway Center, Pittsburgh 22, Penna.

PITTSBURGH SUPERFINE INSULATION IS A PRODUCT OF THE FIBER GLASS DIVISION OF PITTSBURGH PLATE GLASS COMPANY

Sales Offices are located in the following cities: Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, Minneapolis, New York, Philadelphia, Pittsburgh and St Louis



SYMBOL OF SERVICE FOR SEVENTY-FIVE YEARS
PITTSBURGH PLATE GLASS COMPANY

### **New Products**

Continued from Page 166

### **Elevating Trailer**

from Trailevator Div.
Magline, Inc.
Pinconning, Mich.

has a hydraulically operated bed which lowers to ground level then lifts and locks in hauling position. The bed will hold for loading at any level in between. The trailer weighs 960 lb, is rated at 2000 lb capacity.



Features include a patented load levelling device, independent wheel suspension and dual leaf-type springs.

### Diesel Starter

from Turner Brass Works Sycamore, Ill.

feeds an ether-base petroleum compound from a pressure tank into the engine's manifold. Called "Quick-

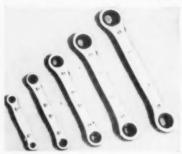


Start," the system includes a disposable tank, copper tubing, and enough starter fuel for 250 starts. In use, driver pulls out the choke for about two seconds then hits the starter button.

### **Box Wrench Sets**

from K-D Mfg. Co. Lancaster, Pa.

include five reversible ratchet models with hex openings from ¼ to \(^{7}\%\) in. Closely spaced ratchet teeth extend



beyond the housing so screws or nuts can be finger-started. The alloy steel wrenches are available individually or in sets of 3, 4 or 5 in plastic kits.

### Marker Lamps

from Grote Mfg. Co. Bellevue, Ky. 1101

In

feature a new "Pres-tite" lens which may be removed and replaced in a few seconds without tools, for fast bulb replacement. The lamps may (TURN TO PAGE 170, PLEASE)

COMMERCIAL CAR JOURNAL, July, 1958

### BRADEN

# The Truck Winch with BUILT-IN Safety Features

BRADEN truck winches have built in safety features that are so important to any operator. The finest materials and workmanship assure maximum performance when you need it most. Rated capacities are established with high safety factors to assure safety during overloads. The BRADEN Oil Cooled, Fully Adjustable, Automatic Safety Brake is the best in the business, so any load can be kept under perfect control at all times.

See your nearest BRADEN dealer for complete information.



MS12-18B

This model has a rated capacity of 30,000 pounds. Designed for heavy-duty trucking and other tasks requiring the movement of loads between 10 and 15 tons.

Write for Catalog

#### BRADEN WINCH COMPANY

P.O. Box 547, Broken Arrow, Oklahoma



Rated capacity: 45,000 pounds on

first layer of cable. Unusually

sturdy and powerful for handling

heavy equipment of all types with

complete safety.

In service around the world

### ENGINEER'S FIELD REPORT

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a. Is n. PRODUCT

RPM MULTI-SERVICE GEAR LUBRICANT

FIRM

MOORE MILL LUMBER CO. Bandon, Oregon

### RPM Lubricant reduces gear wear 30 to 40%



Overheated differential gears on Moore Mill Lumber Co.'s 21 logging trucks were a real problem until firm changed to RPM Multi-Service Gear Lubricant three years ago. "After a rough day's hauling, many of our trucks would pull in with the lubricant actually boiling and bubbling in the case," reports Maintenance Superintendent John Goodwin (above), shown tightening differential inspection plug.

"Overheating like this shortens gear life...causes pitting and scoring. With RPM Multi-Service Gear Lubricant, gear wear dropped 30 to 40%, overheating ended, maintenance was no longer a problem. In the 3 years we've been using RPM Multi-Service Gear Lubricant, we haven't lost a differential drive or bull gear. This lubricant also stopped gear galling and roughing of bearings in transmission." Firm's trucks make 2 to 3 round trips a day from logging shows to mill...average 5,000 miles a month each.

RPM)

For More Information about this or other petroleum products, or the name of your nearest distributor, write or call any of the companies listed below.

THADEMARKS "NPM" AND "CHEVHON" DESIGN

STANDARD OIL COMPANY OF CALIFORNIA, San Franciso 20
THE CALIFORNIA OIL COMPANY, Perth Amboy, New Jersey

Why RPM Multi-Service Gear Lubricant prevents wear



- Special compound forms protective coating on gears...resists rubbing action of hypoid gear teeth
- Withstands extreme temperatures and pressures...highly oxidation resistant...keeps bearings and gears cool
- Inhibitors resist rusting, stop foaming...lubricates integral bearings...will not separate

STANDARD OIL COMPANY OF TEXAS, El Paso The California Company, Denver 1, Colorado





More trucks, buses, trains are washed with Speed Wash Fountain Brushes than any other. No wonder - with Speed Wash one man can do the work of two faster, better. Speed Wash tufts are 50% Nylon-50% Horsehair bristles - cannot mat or tangle. Only Speed Wash has tufts that cannot come out, cannot come loose. Only Speed Wash outlasts ordinary brushes 3 to 1.



BRUSH COMPANY 530 N. 22nd St., Milwaukee, Wis.

Please ship the following: 240 OBLONG SPEEDWASH 250 ROUND SPEEDWASH

NAME ADDRESS ..

### New Products

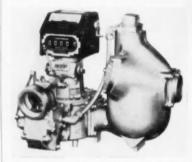
Continued from Page 168

also be used as clearance lamps. They have a heavy steel housing, plastic lens, and extend 11/2 in. from the mounting surface. The lamps are available with a 6- or 12-volt bulb in either 2 or 3 cp.

### Flow Meter

from Meter Div. A. O. Smith Corp. 5715 Smithway St. Los Angeles 22

provides fast discharge from tank trucks by gravity. The four-inch unit is rated for flow of 300 gpm. Known



as Model No. T-30, the unit features the company's rotary positive displacement design.

### **Telescopic Hoists**

from Gar Wood Industries, Inc. Wayne, Mich.

feature short stroke design with only one moving sleeve section. The TA and TR series twin cylinder under-



body hoists range in capacity from 61/2 to 8 tons. They have a full circulating hydraulic system which prevents excessive oil pressure without a relief valve.

(TURN TO PAGE 172, PLEASE)

### LOCATE TIRE LEAKS INSTANTLY... with Amazing New Saves Time - Saves Work

ENDS MESSY DUNKING!



-and the tiniest leak shows up in a moun-tain of bubbles. For all tires-tubeless and tube-type. One quart

of concentrate tests 900 to 1000 tires.

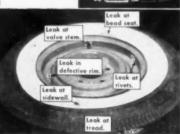


ic air release.

D-100

Detecto - Mist Spray Unit. Portable 1-qt. size. Ideal for service stations and trucks. Solid brass. Automatic air release keeps solution from aerating.





SEE YOUR JOBBER for Ken Detecto-Mist Solution and Spray Units. Locate leaks instantly in large or small tires — passenger car, truck, earthmover, bus, aircraft on or off the vehicle. Made by the world's largest exclusive mfgrs, of tirechanging tools and equipment.

The KEN-TOOL Mfg. Co. AKRON 5, OHIO



Maintenance managers of many large fleets find that Blue Streak Heavy-Duty Fleet Ignition substantially reduces emergency road calls and "down time" caused by ignition failures. See your Blue Streak jobber for details, or write

Standard Motor Products, Inc., Long Island City 1, N. Y.



PIONEER IN HEAVY-DUTY IGNITION FOR FLEETS

### **New Products**

Continued from Page 170

### **Hinged Ratchet**

from Bonney Forge & Tool Works 2400 N. Rockhill Rd. Alliance, Ohio

has a handle which allows up to 30 deg movement in either direction. With the hinged handle it is possible



to by-pass obstructions. Friction action of the handle assembly permits the tool to be worked into close quarters without losing the degree of angle. The head may be quickly replaced by removing the snap ring which holds it in position.

#### Truck Tire

from Pennsylvania Tire Co. Mansfield, Ohio

is known as the Turnpike Miler and comes in sizes from 7.50-20 through 10.00-22. It features five-rib sawtooth tread design and cap plies for bruise resistance and strength. The company has also added a new smooth tread tire for highway building equipment. Known as the Super Turnpike Roller, it is a six-ply rayon model in the 7.50-15 size.

#### Cell Tester

from Burton-Rogers Co. Sales
Division of the Hoyt Electrical
Instrument Works,
42 Carleton St., Cambridge 42, Mass.
features an adjustable pointer which
records the first cell reading as a



"memory" for comparison with the readings on other cells. The Hoyt No. 700 tester has a meter with a four-color expanded scale which is said to read to 1/100-volt during load and open circuit tests on 6- or 12-volt batteries. Pointed prods adjust to fit all cell straps.

### **Impact Wrenches**

from Gardner-Denver Co. Quincy, Ill.

include two small, lightweight models rated at % in. nut-setting capacity. Model No. 18B-7 has a % in. square drive while Model No. 18B-7S has a % in. built-in hexagon slip chuck. Accessories include stud drivers, socket adapters, hexagon shank socket holders and universal joint socket adapters.

(TURN TO PAGE 174, PLEASE)



### TULSA POWER TAKE-OFF

Years of engineering mastery, manufacturing experience and tough field testing have proved the unequaled quality of Tulsa Power Take-Offs. Precision-made . . . compact . . . powerful, durable and quiet . . . Tulsa Power Take-Offs are foremost with these outstanding features . . shaved and heat-treated gears, hardened shifter yokes; anti-friction bearings throughout; strong, lightweight heat-treated aluminum housings . . . extremely low prices with nationwide distribution and service. Tulsa assures you unequaled quality in Power Take-Offs sized from single speed, medium duty to multiple speed, heavy duty models.





Imagine increasing your trucks' payloads 400 lbs. in less than an hour! That's what Hypressure Jenny Steam Cleaner can do by removing caked-on, fire-feeding grease and dirt from engines, chassis, wheel housings, axles, and fifth wheels. What's more, new Jenolizing instantly stops rust that usually follows ordinary steam cleaning!

Here's how easy it is with Jenny® and Jenolizing!



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• Hook up your model 1250 Hypressure Jenny-in one minute you are ready to begin Jenolizing.



grease and soil melt away like snow!



2. Direct Jenny vapor spray against 3. Spray rust-preventive Protect-Ogrimy, dirt-clogged areas - watch Gloss over engine and other vital parts -you're ready to roll; pounds lighter!

You can put Jenny and Jenolizing to work on time-payment plan for as little as \$30.60 a month! Write today for more information, and a free demonstration.

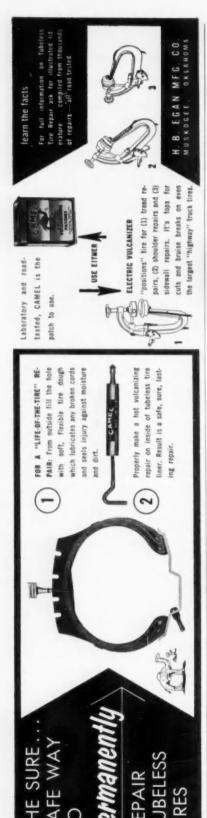
\*Based on only five loads a day!



HOMESTEAD VALVE MANUFACTURING COMPANY Hypressure Jenny Division, P.O. Box 90, Coraopolis, Pa.

-
Send me more facts about Jenny and Jenolizing, and the name of my local Jobber.
NameTitle
Company
Address
CityZone State

----- MAIL FOR DEMONSTRATION



### **New Products**

Continued from Page 172

### **Electric Hoist**

from Burtchaell Heating Co. Hoist Div. 2944 S. E. Powell Portland 2, Ore.

has 1000 lb lift capacity. It operates from a 6- or 12-volt truck battery. The Model No. 52-H Pacific Overhead



hoist has a frame designed to permit the I-beam to be moved forward and secured in the "travel position" over the cab. For loading and unloading, the I-beam slides out over the rear of the truck to provide a clear vertical lift.

### Side Rack

from Pierce Metal Products 22148 Michigan Ave. Dearborn, Mich.

may be used on pickup trucks of up to 1-ton size. The all-steel extension rack can be quickly assembled. Mem-



bers are 5 gage, 1 x 2 in. steel channel. Adjustable sleeves are 5 gage, 1 x 2 in. steel tube. Captive weld nuts speed assembly.

### Valve Seat Inserts

from Aluminum Industries, Inc. 3670 Werk Rd., Cincinnati, Ohio

are a complete line of "Permite" replacement units. They are individually packaged and color coded and are accompanied by a comprehensive catalog which shows applications of each insert. The inserts are of three types: molybdenum alloy, chrome cobalt, and chrome molybdenum alloy.

(TURN TO PAGE 177, PLEASE)



# every minute of BUSY TIME IDLE TIME

Can save you thousands of dollars!

It's tamperproof! It automatically keeps a work record of any piece of equipment that moves. It lets you put your finger on costly delays or overtime. It records every start, stop—can even record engine idling time. Here's the business-like way to know what service you are getting from every piece of equipment.



This
"Time Clock"
is called

### SERVIS RECORDER

It makes a clear record on permanent charts. Motion activates the recorder — no mechanical hook-up is involved. Write today!

### THE SERVICE RECORDER COMPANY

1013 F ROCKWELL AVE. . CLEVELAND 14, OHIO

General Electric makes 148 different auto lamps

# BUT YOU NEED ONLY 19 FOR ALMOST ALL YOUR REPLACEMENT NEEDS



You can handle 86.5% of 6-volt replacements with 5 G-E bulbs:

1154 1158 63 51 55

You can handle 84% of 12-volt replacements with 9 G-E bulbs:

67 1445 1034 53 57 1073 89 1003 1004



You can handle 99% of headlamp replacements with 5 G-E lamps:

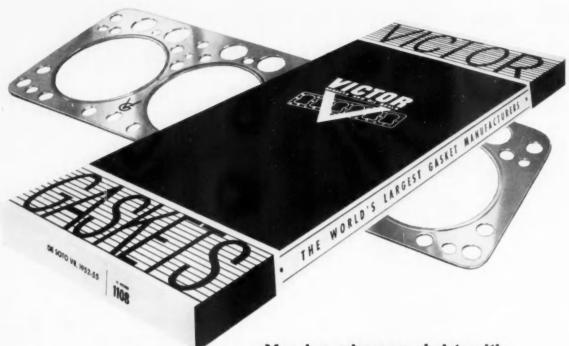
4001 5400S 4002 5040S 5440

**CHECK YOUR STOCK RIGHT NOW**—in warehouse and vehicles—and order the G-E lamps you need. Get 'em in new G-E Space-Saver Packs. They use 30% less space; no annoying covers or flaps. Drivers and

parts men see at a glance which bulbs are needed because identification is on both ends of the packs. General Electric Co., Miniature Lamp Dept. CCJ-78, Nela Park, Cleveland 12, Ohio.

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You're always right with

# VICTOR

THE RIGHT REPLACEMENT
THE RIGHT FIT
THE RIGHT PERFORMANCE

Assured by Victor's leadership in original equipment sealing parts development

The 100% Coverage Line for Cars, Trucks, Tractors, Stationary Engines Stocked Locally by Your Victor Jobber

### VICTOR

GASKETS . OIL SEALS . PACKINGS

Victor Mfg. & Gasket Co., P.O. Box 1333, Chicago 90, III.
Canadian Plant: St. Thomas, Ontario

### **New Products**

Continued from Page 174

### **Battery Cables**

from Crescent Co. Pawtucket, R. I.

have a protective coating over the terminal and over part of the cable leading to the terminal. The coating



is claimed to resist acids, alkalies, alcohols and oxidizing agents and to have a high abrasion resistance. It is said to more than double cable life.

#### Filter Refill

from Purolator Products Inc. Rahway, N. J.

will replace crankcase vent filter elements on many late model Ford trucks, buses and passenger cars. Refill unit No. 61905 replaces Ford element No. EAD-6841-A.

#### **Governor Test Stand**

from Hill Machine Co. 1301 Eddy Ave. Rockford, Ill.

is an air operated unit for testing overhauled hydraulic governors. It has a self-contained, temperaturecontrolled oil supply which simulates normal operating conditions and



tests relief valve pressures. The governor is driven by an air motor with a speed range of 0 to 5000 rpm. Motor speed is controlled by the governor and indicated on an electric tachometer. The stand requires a 220-volt 60-cycle power supply and 100 lb air pressure outlet with a ½-in. connection.

#### Valve Lifters

from McQuay-Norris Mfg. Co. 2320 Marconi Ave. St. Louis 10, Mo.

include a full line of zero-lash hydraulic lifters for replacement use. Features include a patented combination check valve spring which assures immediate closing of the lifter check valve. The lifters are pre-lubricated and the bottom of the tappet is "Parko-lubrized" for initial run-in protection.

### **Nylon Tires**

from United States Rubber Co. Rockefeller Center, New York include tube and tubeless models. The "Royal Delivery" line ranges from 6:00-16 to 10:00-22 in tubed construction and is available in 6:70-15 and 6:50-16 sizes in tubeless models. Sizes with 8-ply rating and up are made with a nylon cord which has a tensile strength rating of 53 lb.

#### Fuel Pressure Control

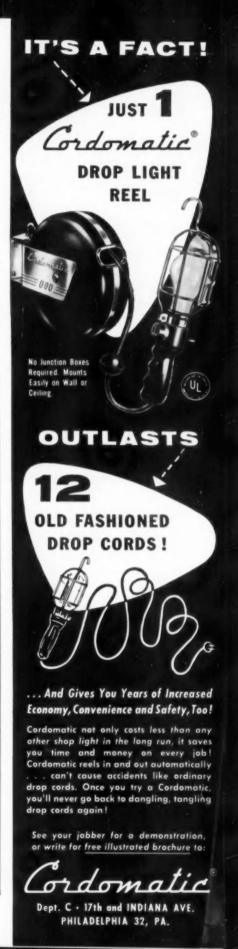
from AC Spark Plug Div. General Motors Corp. Flint 2, Mich.

reduces idling fuel pressure to 1% lb for fuel economy while boosting pressure when extra power is needed. The 12-oz. unit is mounted between the fuel pump and the carburetor. A diaphragm, spring, and valve arrangement regulates the flow of gasoline to the carburetor to prevent flooding, stalling, or fuel waste during normal operation and to give desired engine performance during acceleration.

### Marker Lights

from Arrow Safety Device Co. Georgetown 12, Dela.

include two flush mounting models in the new 48 Series. Among design features are stainless steel rim, backplate, and hardware, brass sockets (TURN TO NEXT PAGE, PLEASE)



### **New Products**

Continued from Page 177

with rubber pigtail assembly, asphaltimpregnated lens and mounting gaskets. One of the flush models uses two bulbs which provide 4 cp. Each bulb will work independently if the other burns out.

#### Crack Detector

from United States Casting Repair Corp. 2500 E. York St. Philadelphia 25, Pa.

uses a magnetic probe and powder to locate surface cracks or faults on ferrous castings. The Seal-Lock detector weighs 20 lb, can be used with 110-volt AC line or a 6- or 12-volt battery. The kit includes probe, AC and DC connectors, sprinkling bulbs, yellow and gray magnetic powders.



### Fold-Away Crane

from Guibert Steel Co. Box 4342, Pittsburgh, Pa.

may be installed on 1-ton or lighter pick-up trucks. It folds down flat into the truck bed when not in use. Features include a remote-controlled battery-powered winch with two-ton capacity. Boom is a single roll-away unit which can be easily set up or stored away. The tubular "A" frame locks in place so rough roads and side pulling cannot dislocate the boom.

### Flexible Shaft Drive

from Stow Mfg. Co. 443 State St. Binghampton, N. Y.

will operate in pairs off a dual power take-off to drive two separate applications on a trailer. It consists of a 1¼-in. heavy duty, tightwound power drive core covered by a steel-lined, neoprene rubber covered casing. It has a steel reinforcement on the casing at each end and a slip joint on the output end to take care of the changes in length when the tractor-trailer turns.

#### 30-Ton Puller Set

from Wright Tool Co. 4316 N. Woodward Ave. Royal Oak, Mich.

will handle diameters up to and including  $26\frac{1}{2}$  in. reach and spread. It is designed for fast removal of bearings, gear, shafts, etc. without distortion.

DELCO REMY

AUTO LITE

### **MIDWEST GENERATOR CO.**

SPECIALIZING IN
NEW & REBUILT STARTERS AND GENERATORS
FOR

DIESEL, INDUSTRIAL AND TRUCK ENGINES
(IF IT WAS MADE WE CAN REBUILD IT)
GENERATORS FOR 2 WAY MOBILE RADIOS

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LEECE NEVILLE

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#### Classified Advertisements

PLASTIC DECALS FOR TRUCKS AND BUSES; tough, permanent, waterproof Vinyl plastic; can be applied without water. Write for free samples, estimates. Multi-Color Process Co., 319 South Quincy, Tulsa, Oklahoma.

WANTED: USED GM51-71-110 Diesel Injector Parts. Al, 2093 East 19 Street, Cleveland 15, Ohio.

### **BUY BONDS**



### NOW 4 WAYS TO ROLL 'EM SAFER! LONGER!



Write us for literature and your nearest distributor

### WILLIAMS' SAFETY SYSTEMS

ANTI-JACKKNIFE SYSTEMS—
Williams' newest contribution to truck
safety. Simple to install, low in cost, positive in results.

2 COMPRESSION BRAKE KITS—
Engine retardation spares drums and shoes on downhill runs, adds life to the engine, too. Now available for gas and Diesel.

3 TRAILER BREAKAWAY SAFETY KIT—The oldest, most efficient, safest and most complete breakaway system.

4 EMERGENCY CONTROL SYSTEMS

—New sealed-in, axle-by-axle or chamber-by-chamber emergency system with its own separate air supply system. Simple to install, easy to maintain, efficient in operation.

MANUFACTURED BY THE PIONEER IN BRAKE SAFETY:

POWER BRAKE EQUIPMENT CO.

1632 5 F 11th Avenue

Portland 14, Oregon



### "Our 40 million miles of experience with Purolator Air Filters has saved us thousands of dollars in engine repairs."

says Mr. Mel McClure, Shop Supt. Yellow Transit Freight Lines, Inc.

The Yellow Transit Freight Lines, Inc. uses Purolator AF-50 dry-type Air Filters in all 302 of its fleet of Kenworth line haul tractors.

As a result, they have practically eliminated damage caused by dirt in the engine . . . reduced engine down time to a minimum . . . and saved thousands of dollars in maintenance.

To accomplish these major economies in time and dollars, the air filter

is cleaned at each 8,000-mile P.M. inspection. In this way, each air filter is used for 32,000 miles before being discarded. "As a result, dirt is kept out of the Turbo Charger and combustion chamber, which is what we want for longer engine life. We'd rather clean the filters more often, than to have dirt enter the engine," says Mr. McClure.

This is another example of how

leading fleets protect equipment, save money, and improve operation profits with Purolator Dry Type Air Filters.

Without obligation, a Purolator Engineer, will gladly demonstrate the economies and advantages of air filtration for your particular fleet requirements at your request.

Write or call . . . or send for free literature today.

MAIL THIS COUPON TODAY!

FOR MAXIMUM ENGINE PROTECTION

PUROLATOR PURIL OF THE U.S. Pal OF

Oil, Air & Fuel Filters

PUROLATOR PRODUCTS INC. Rahway, N. J.; Toronto, Ontario, Canada

Purolator Products Inc.
Dept. I-758
Rahway, New Jersey
Yes, I want more information about
dry-type filtration for fleets.
Name\_\_\_\_\_
Company Name\_\_\_\_\_
Address\_\_\_\_\_
City\_\_\_\_\_ Zone\_\_\_\_ State\_\_\_\_

### **July News Roundup**

Continued from Page 110

Railroad and Utility Commissioners that federal and state regulation of transportation is necessary to protect the public interest. He also pointed out that such regulation cannot always be received with loud cries of joy from those who are so regulated.

#### Claims Awards Presented

DENVER, COLO. — ATA's National Freight Claim Council at its annual meeting gave first prize in all three divisions of its annual National Claim Prevention Contest to North Carolina based fleets . . . Class A—Johnson Motor Lines, Class B—Miller Motor Express, Class C—Fredrickson Motor Express. At the same meeting, the Oklahoma City (Okla.) Motor Carriers Claim Prevention Conference was awarded the first \$250 P. M. Greenberg Award for its contribution to prevention of truck freight loss and damage.

#### **AMA Gets New Officers**

DETROIT - L. L. Colbert, Chrysler

#### Mobile Office Meets a Mamouth Mack

H.

in

BROTH

AND I

TILL I

AT TH



Last month CCJ's mobile team visited Mack Truck's new electronically-operated cab assembly line in Allentown, Pa. While there, they became intrigued with this 22½-ton off-highway giant. Shown with CCJ technical editor Paul Murphy (left) is Mack President P. O. Peterson and Vice President for Operations, H. W. Bush.

Corp. President, is new president, Automobile Manufacturers Assn. Also elected to office in the Association were Ford Motor Co. President Henry Ford II—passenger car division vice president; White Motor Co. President J. N. Bauman—commercial car division vice president; Mack Trucks

President P. O. Peterson—treasurer. Re-elected secretary was GM President Harlow H. Curtice.

Bernard W. Crandell, GMC Truck and Coach Division public relations director, was elected chairman of AMA's Motor Truck Public Relations Committee. New head of the Associa-













tion's Motor Truck Division is John H. King, who was with AMA's Washington, D. C., staff. Karl M. Richards remains as head of the Association's Field Service Dept.



As a service to fleet operators, recent major laws affecting commercial vehicle operation, both bus and truck, are digested here. As reported, the summary serves as a guide so the fleetman may check the exact wording of the law through his state truck association or state capital to see how it affects his operation.

Louisiana — New regulations have been issued to govern lease and interchange of motor vehicle equipment by authorized carriers.

Mississippi — Special \$120 annual tax is levied on trucks of greater than 59,000 lb gross weight used in

### 1958 Domestic Truck Factory Sales by G.V.W.

Month	6,000 lb. and less	6,001- 10,000 lb.	10,001- 14,000 lb.	14,001- 16,000 lb.	16,001- 19,500 lb.	19,501- 26,000 lb.	26,001- 33,000 lb.	Over 33,000 lb.	Total
January February March April	26,460 27,929	10,187 8,302 8,450 8,866	1,069 1,016 963 1,041	5,454 5,167 5,581 5,896	7,032 5,330 5,363 5,933	3,596 3,527 4,073 3,918	2,473 2,450 2,938 2,169	2,054 1,768 2,339 2,384	64,008 54,020 57,636 56,029
Total 4 Mos. 1958 Total 4 Mos. 1957	112,354 158,672	35,805 45,536	4.089 9.610	22,098 38.975	23,658 15,639	15,114 12,915	10.030 11.933	8,545 11,554	231,693 304,834

Source: Automobile Manufacturers Association.

transport of perishable commodities from deep water ports (H1161). Special weight limit of 64,650 lb GVW is provided for trucks transporting imported perishable commodities subject to an additional \$50 per truck annual fee and limiting them to a 45-ft wheelbase (H923).

New Jersey—Motor fuel tax rate became 5¢ per gal effective July 1, 1958 (H63).

New York—Effective July 1, 1958, it is illegal to have any object in a vehicle that obstructs driver's view through windshield. New regulations governing transport of explosives and other dangerous articles through Port of New York Authority tunnels went into effect July 1, 1958. For a copy, write The Port of New York Author-

ity, Tunnels and Bridges Dept., Room 1302, 111 8th Ave., New York, N. Y.

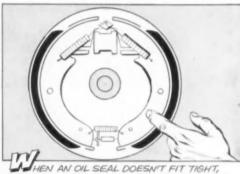
Rhode Island—Truck fees for those over 10,000 lb GVW are increased ranging from \$44 to \$240 (H1190). Gasoline tax went to 6¢ per gal on June 1, 1958 (H1192). Periodic inspection of vehicles is required (H1210). Speed limit within 300 ft of any school is 20 mph (S482).



Central Truck Lines, Tampa, Fla.— (TURN TO PAGE 184, PLEASE)







GREASE SEEPS OUT ONTO BRAKE LINING AND RUINS IT. ONE BRAKE SLIPS, THE OTHER HOLDS—THROWS CAR OFF COURSE ON QUICK STOPS. SOMETIMES A WHEEL CAN EVEN "FREEZE"







### Re-grinding spoiled one of these pressure plates

It will cause the clutch to fail before 25,000 miles; the other will go 100,000!

The 100,000-mile plate meets Lipe factory standards for trueness and thickness. All plates that do not meet these standards are scrapped by Lipe.

The 25,000-mile plate was reground by a *field* rebuilder. Because he lacked the engineering knowledge and precision equipment, it will fail before onequarter of normal life expectancy.

Plates too thin to absorb heat generated by normal clutch operation will

warp, dish, slip and check. At the same time, other clutch and drive-line components may be damaged, too.

For Full Clutch Mileage . . . Go to Lipe!

You get full performance, full dependability, full mileage in a Lipe Guaranteed Clutch. You get a clutch that is in perfect balance . . . eliminating vibration forces destructive to engine and drive-line components.

All Parts in All Lipe Clutches Must Conform to Highest Material and Precision Standards

From our experience in supplying clutches to 54 makers of heavy duty equipment comes the know-how that goes into the manufacture of the Lipe Guaranteed Clutch. That is why we can unconditionally guarantee our product to be unequalled by field rebuilders.



Look for this Factory Seal when you take delivery on a Lipe Guaranteed Clutch for replacement service. It is your assurance of long, trouble-free life and big long-run savings!

SEND FOR OUR FREE "Clutch Facts" Booklet

Tells you how to get more life from your heavy duty clutches, and what to look for when replacing them









# PERFORMANCE IS THE PAYOFF!

That's why
Bendix Electric
Fuel Pump Sales
are Zooming



There's no substitute for on-thejob performance. That's why people who have tried all the others always come back to the Bendix\* Electric Fuel Pump when they need "must do" performance. The Bendix pump has passed all the tests. Under military supervision, it proved

itself at 114° Fahrenheit as well as at 76° below zero. No other pump anywhere near its price class could make the grade. The Bendix Electric Fuel Pump is easy to install and service, delivers more gallons per hour—and positively eliminates vapor lock. It's the best fuel pump built,

\*REG. U.S. PAT. OFF.

# Bendix ELECTRIC FUEL PUMP

BENDIX AVIATION CORP. (Eclipse Machine Div.), Elmira, N. Y.

#### Personnel-Cargo Carrier



Willys Motors, Inc., has recently developed a new ½-ton platform-type combination personnel and cargo carrier. It is now undergoing tests with the U. S. Army Ordnance Corps. It converts to a cargo carrier by folding the seats flush into the platform bed and is powered by a Willys four-cylinder, air-cooled aluminum engine mounted under the platform. The vehicle features individual wheel suspension, four-wheel drive and selective two or four wheel steering. It can climb grades up to 60 per cent and roll along at 60 mph on the open road.



### CAN BE INSTALLED WHERE YOUR TRAILER IS MADE

The million-mile tested LOADCRAFT AIR-RIDE has what it takes to make you a happy user. In addition to its many patented features, it is now made of lightweight, hi-strength castings for less weight, less cost. Available as initial equipment through many licensed trailer manufacturers.

#### HERE'S WHAT IT OFFERS ...

- Units available for tandem- or single-axle trailers.
- Adjustable radius rods for axle alignment and to keep axle vertical at all times.
- · Controlled pressure.
- Easy maintenance.

Manufacturer's Inquiries Invited



STATE

### July News Roundup

Continued from Page 181

to 34 drivers throughout its system with no-accident records of one to 12 years. Three had records of over 10 years.

Midwest Freight Forwarding, Chicago—to 17 drivers. Combined record totals 126 years, 6,297,255 miles of accident-free truck driving.

Branch Motor Express, New York City—to 261 drivers. Awards were made at a series of terminal meetings.

Eastern Express, Terre Haute, Ind.—to 640 drivers. Within the over two-million mile no-accident period, some 2105 years of accident-free driving were rung up.

American Transit Assn. has announced bus fleet winners in its 1957 safety award winners. Top awards went to D.C. Transit System, Wash-

### 1958 Truck Trailer Shipments

	April	Four Months
Type of Trailer Vans		
Insulated and refrigerated	306 46	1,064
Steel Aluminum	260	923
Steel	26 28	165 165
Aluminum	199	574
Furniture Steel Aluminum	199	574
All other closed-top Steel Aluminum	1,107 320 787	4,770 1,687 3,083
Open-top	92	547
Steel Aluminum	62 30	289 258
Total-Vans	1,730	7,120
Tanks.		
Non-and low pressure Petroleum		
Carbon and alloy steel	201	800
Stainless steel Aluminum	117	85 417
Total Petroleum. Chemical, food, fluid solids All other, incl. aircraft	340 65	1.302 268
refuelers	38	68
chemicals, etc.	22	105
Total-Tanks	465	1,741
Pole, pipe and logging		
Single axle	29 45	107 142
Total	74	249
Platforms		
Racks, livestock and stake	120	508
Grain bodies, all types Platforms (flats), all types	82 421	260 1,551
Total—Platforms	623	2,319
Low-bed heavy haulers	244	735
Dump trailers All other trailers	242 172	604 586
Total - Complete Trailers	3,550	13,354
Trailer chassis	245	1,013

Source: Industry Division, Bureau of the Census.

ington, D. C., Group I; Phoenix (Ariz.) Transit System, Group II; Gary (Ind.) Transit, Group III; South Carolina Electric & Gas, Charleston, S. C., Group IV; Savannah (Ga.) Transit, Group V; Hamilton (Ohio) Transit, Group VI; Connecticut Co., Meriden Division, Group VII.

Special citations went to Toronto (Ont., Canada) Transit Commission, Group I; San Diego (Cal.) Transit, Group II; Honolulu (Hawaii) Rapid Transit, Group III; South Carolina Electric & Gas, Columbia, S. C., Group IV; Columbus (Ga.) Transportation, Group V; Safety Motor Transit, Roanoke, Va., Group V; Springfield (Ohio) City Lines, Group VI; Public Service Coordinated Transport, Central Division, N. J. Group VII.

Citations for greatest improvement were won by Philadelphia Transportation, Group I; Miami (Fla.) Transit, Group II; Greater Winnipeg (Man., Canada) Transit Commission, Group (TURN TO PAGE 186, PLEASE)

spiete line of

all automotive parts

and fasteners



DORMAN PRODUCTS INC. . CINCINNATI 2, OHIO

Dorman Quality Fasteners

save mechanics' time

### Now-Figure Your Fruehauf Lease Payments—In Just 8 Seconds!

Consult Your Fruehauf Salesman For <u>Scientific</u> Leasing Information On Any Kind Of <u>Equipment</u>

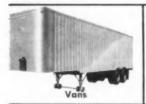
Practically any kind of Trailer, either brand new or used and reconditioned, can be leased from Fruehauf for periods of 12 months to 5 years. In many operations, the capital that this convenient plan frees for other important uses is mighty welcome.

Of course, your own business judgment will direct whether you gain more by acquiring equity through outright purchase or by conserving capital through a low-cost lease. Whatever you decide, Fruehauf has the Finance Plan or Leasing Plan geared to your budget and your type of haul. Now that Fruehauf has developed Trailer leasing into an exact science, any Fruehauf salesman can calculate the exact amount of your monthly leasing payments on any type of Fruehauf Trailer in 4 seconds with the handy new Leasing Calculator.

For extra mobility in your financial picture, Leasing Plans with purchase options are also available. Your lease payments apply to the purchase. Investigate all the advantages of leasing from Fruehauf now.



IMMEDIATE DELIVERY ON A WIDE RANGE OF FRUEHAUF TRAILERS FOR SALE OR LEASE!









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SAVE MONEY with

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America's largest GM fuel injector rebuilder



CAR WASHERS AUTOMATIC ALL PURPOSE SYSTEM REVOLUTIONIZES VEHICLE WASHING WRITE FOR INFORMATIVE LANSING S. MICHIGAN FOLDER

Statisticians PROVE! 68% of entire engine maintenance costs are caused by VALVE SYSTEM REPAIRS!

### SKINNER



- 1. Greatly reduce these costly repairs. 2. Increase acceleration.
- 3. Get more gas mileage.
- 4. Increase valve life.
- 5. Increase efficiency and power. Push Red 6. Reduce down-time for costly valve maintenance.

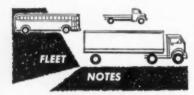
Use SKINNER AUTOMATIC Valve Adjustors to replace both solid and hydraulic lifters. They quiet the valves, increase efficiency and power. They're self-adjustable once installed.

	Allied Precision Products Dunedin, Florida	cc	1
	Name years)		
i	Address		
i	CityState		

### July News Roundup

Continued from Page 184

III; Sacramento (Cal.) Transit, Group IV; Fort Wayne (Ind.) Transit. Group V; Anderson (Ind.) City Lines, Group VI; Connecticut Railway & Lighting Co., Norwalk Division, Group VII.



Bonney Motor Express, Norfolk, Va., has added 10 new International AC-225-D models and four R-205 models. The AC-225-D's are powered with Cummins NH-220 diesel engine, have a Fuller 10-speed "RoadRanger" transmission, sliding fifth wheel.

Red Arrow Freight Lines, Houston, Texas, is building a new terminal here on a 15.25-acre site at 4400 West Irving Blvd.

Olson Transportation, Green Bay, Wis., has put into service 10 new International tractors. They are powered with Cummins 180-hp diesel engines, measure 90 in. bumper-to-backof-cab, pull a 40-ft trailer within a 50-ft overall limit, have an 11,000-lb front axle, direct in 5th transmission, trailing axle and 2-speed driving axle.

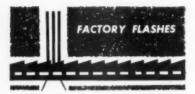
Standard Oil Co. (Indiana) has put into service 27 home delivery tank trucks made by Farrell Mfg. Co., Joliet, Ill. New units have no "bucket box," all controls and pumping equipment being mounted on rear platform.

Harold E. Pettigew has been appointed maintenance superintendent and Kenneth C. Cole has been made safety supervisor for Strickland Transportation and Strickland Motor Freight, Dallas, Texas.

State of Vermont has taken delivery of 22 Studebaker police cars, expects to order nine more.

California Highway Patrol has ordered 325 Mercury Montereys. They'll have the 430-cu. in. Marauder engine plus Mercury's new multi-drive "Merc-O-Matic" Transmission.

Bos Lines, Marshalltown, Iowa, has just put in service 15 International V-195 tractors. Five of them are equipped with "Select-O-Matic" transmission with torque converter.



Jack D. Porter is new fleet sales manager, Goodyear Tire & Rubber Co., Akron, Ohio.

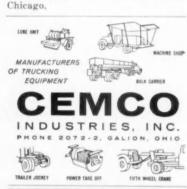
J. R. Sanchez is new director of Mobile Health Division, Lyncoach & Truck Co., Oneonta, N. Y., producer of LCT mobile health units.

Bostrom Corp., Milwaukee, Wis., is new name of Bostrom Manufacturing Co., maker of Bostrom truck

Mack Trucks put into production a new axle shaft manufacturing department and a new electronically-operated cab assembly line at its Allentown, Pa., plant last month.

MGM Brakes, Inc., announces its parking and emergency brake (Nov. '57, page 315) is now available on Kenworth, Freightliner and Peterbilt

William J. Hawkins is now general service manager, Alemite and Instrument Division, Stewart-Warner Corp.,





# Still Available!



Looking for a trailer line with more acceptance, fast turnover, greater profit? Then you want a Keystone "trailership". Every quality Keystone Trailer is individually custom-crafted with exclusive features to the customer's exact specifications and delivered in days, not months; livestock, pullmans, grain haulers, dry freight vans, open tops, reefers, or special vans. That's why Keystone Trailers are a consistent, year-round source of sales and profit to Keystone dealers. For full information without obligation.

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KEYSTONE TRAILER COMPANY

1503 Guinotte Ave. Kansas City, Mo. grain haulers, special vans, sistent, year-stone dealers.

### NONSLIP VALVE SPRING INSERTS CORRECT AND PROTECT THE VALVE SPRING ASSEMBLY

THE LOW SPRINGS NEW YORK PROPER TO SERVICE T

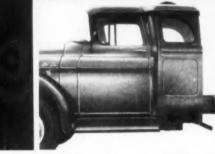
for further information write to:

SILVER SEAL PRODUCTS CO. 1455 FORT ST. LINCOLN PARK MICHIGAN





# NEW SLEEPER CAB



- . Meets all ICC specifications.
- Most advanced engineered sleeper attachment built.
- Engineered to blend into advanced lines of present deluxe or standard cabs.
- Will decrease CA dimension only 22" — adds only 200 lbs. to gross weight.
- 5" innerspring mattress and built-in ventilating fan in roof furnished.
- 2 large access doors to storage compartment under sleeper bunk.
- Custom trimmed interior insulating and acoustical properties of fiberglass plastic assures maximum sleeping comfort.
- Unit can be mounted easily by dealer or at our plant, with only one day tie-up of chassis.
- Demountable feature Unit can be transferred to another chassis, or removed and filler panel installed by dealer making a more saleable used chassis.

THE D-E-K MANUFACTURING COMPANY
P. O. BOX 85
ORRVILLE, OHIO

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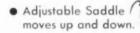
\*Price for standard lowest-priced 3/2 ton pickup with box, including servicing for retail delivery. Optional equipment, transportation and local taxes extra. †Service for retail delivery not included.

Looks like you're going to have to pull the transmission.

### TRUCK TRANSMISSION JOBS DON'T BOTHER US ANY MORE!

Not since we got our handy Ausco Hydraulic Truck Transmission Handler





- Adjustable sides move in or out or form a "V".
  - Transmission is safely and securely held.



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One End Lift Hydraulic and Mechanical



Hydraulic Hand Jacks



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